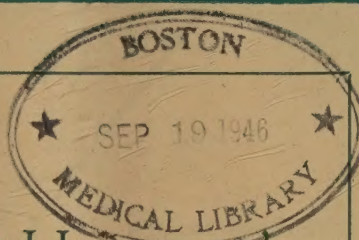


MEDICAL RECORD



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powers are not too
much for such a
profession as med-
icine.

—*Oliver Wendell Holmes*



SEPTEMBER 1946

Vol. 159, No. 9



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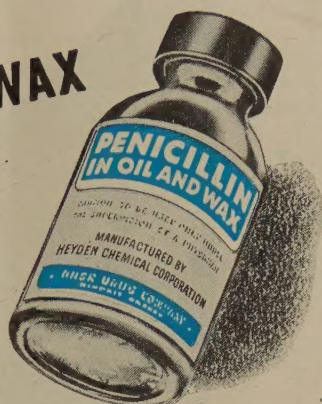
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(1) *The Journal of Laboratory and Clinical Medicine*, 31:3, 313-316, March 1946

(2) *Journal of the Amer. Medical Association*, 130:11, 696-698, March 16, 1946

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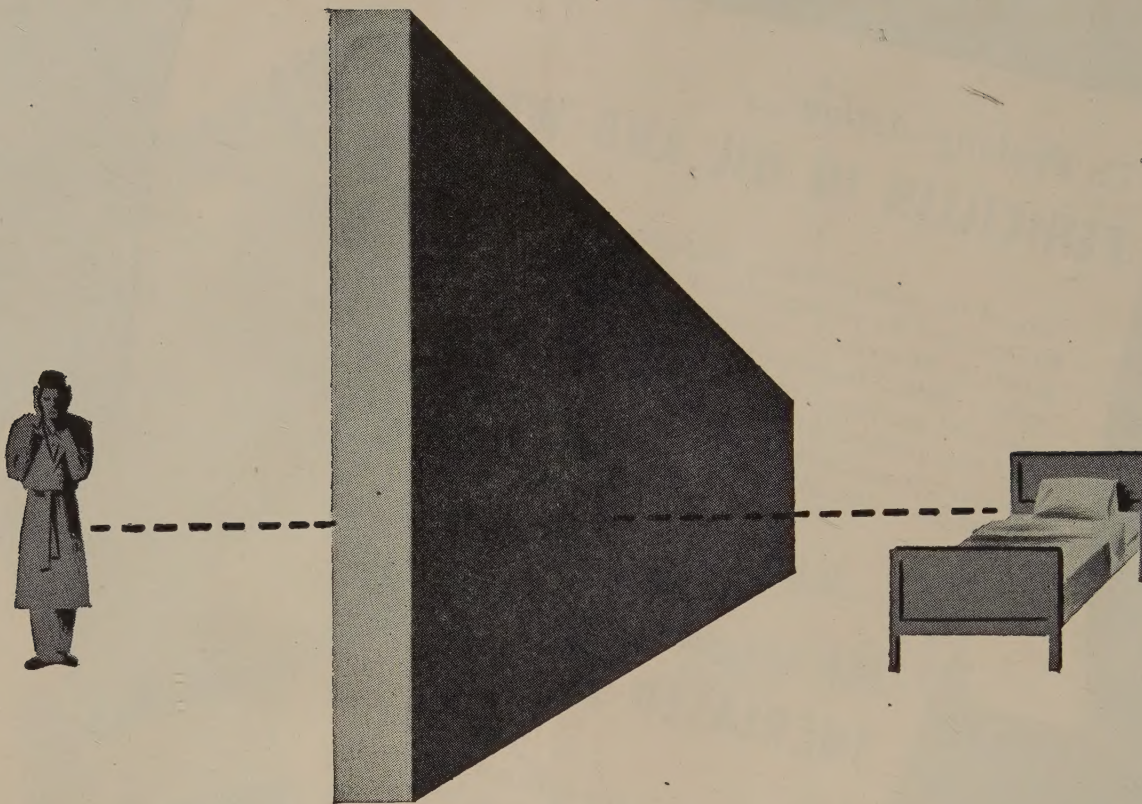
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*L. Goodman and A. Gilman, The Pharmacological Basis of Therapeutics, The Macmillan Company, New York, 1944.

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PUBLISHED MONTHLY BY

THE MEDICAL JOURNAL AND RECORD PUBLISHING CO., INC.

SEPTEMBER 1946

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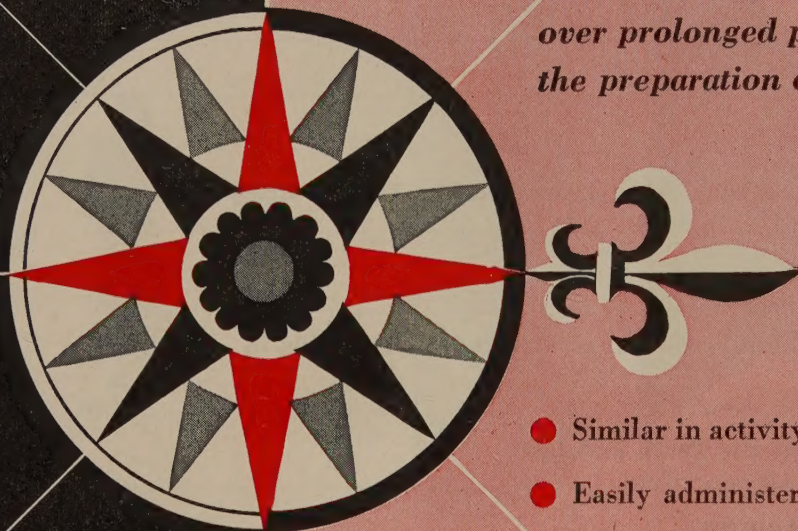
VOL. 159, No. 9
WHOLE No. 2764

Entered as Second Class matter at the Post Office
at Kutztown, Pa., under the Act of March 3,
1879. Office of Publication, 307 Main Street,
Kutztown, Pa. Editorial and Executive Offices,
215 Fourth Avenue, New York 3, N. Y.

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The supply of Folvite is still small, but additional production facilities now under construction will, in due course, provide adequate supplies.

The isolation and synthesis of folic acid is an important achievement in the development of vitamins. Two scientific aspects of folic acid are particularly arresting. For the first time a nutritional factor has been obtained that may be synthesized and studied in pure form, which acts specifically to stimulate red blood cell formation; second, orthodox thinking concerning the problem of large cell anemias has been revolutionized by the discovery that folic acid is in itself specific for such anemias. In other words, complex physiological reactions, or interactions, are not necessary to initiate change of such abnormal blood pictures in the direction of normality. Much remains to be explained as to the reactions involved, particularly why it is that liver

extracts (which contain infinitesimal quantities of folic acid) accomplish the same result so far as change of the blood picture is concerned.

The complex nature of vitamin B commanded the attention of research workers in nutrition during the early 1920's, and a number of the B complex factors were isolated, identified, and synthesized during the succeeding years and other experimental methods were being used in the search for new members of the vitamin B complex. The search for new members of the vitamin B complex is still going on.

During this time however, little clinical research was done because of the scarcity of folic acid, due to the difficulties encountered in isolating the vitamin in the pure state from natural sources. These difficulties disappeared when the synthesis of folic acid was achieved. Adequate amounts were made available immediately to many clinical investigators, and interesting and important clinical reports began to appear. Among those who reported on the use of the synthetic folic acid were Dr. Tom D. Spies and his associates at the University of Alabama, and Dr. William J. Darby at the Departments of Medicine and Biochemistry, Vanderbilt University School of Medicine.

Oral administration of folvite has proved extremely satisfactory. Large dosage is not productive of dangerous toxicity, and oral sensitization has not been reported.

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Open Forum

New Facts About Antibiotics

T. SWANN HARDING
Falls Church, Va.

Just what are antibiotics? Biotic means simply "having a mode of life." Hence an antibiotic is something which prevents certain living things from living. Thus certain bacteria cease to exist as living things in the presence of penicillin. Hence penicillin is antibiotic.

Penicillin is a chemical substance produced by a mold called *penicillium notatum*. A mold is a low-grade plant. Yeasts, smuts, rusts, and mushrooms are all fungi and a mold is a superficial growth produced by certain fungi. In turn the mold has, in the case of penicillin, produced a germ-destroyer of great value to medicine.

But if low-grade plants produce such substances as penicillin, what about plants further up the evolutionary scale? What about onions, for instance?

That higher plants might contain such substances was suspected twenty-five or so years ago when E. M. Osborn, of the Sir William Dunn School of Pathology at Oxford made tests of 2,300 flowering plants. He systematically ground them up and strained the juice to get an extract. In one hundred thirty-four cases these extracts would kill off such germs as *staphylococcus aureus*, good old standby of bacteriologists, and *escherichia coli*.

Osborn got very interesting extracts indeed from the seeds of cabbage, cauliflower, broccoli, kohlrabi, and certain varieties of clematis. Sometimes the germ-killer seemed to come in two components, one of which was a sort of precursor which the other activated to kill germs. This brings us to a group of scientists at the Michigan State College of Agriculture and a team of investigators which included: I. F. Huddleson, internationally known bacteriologist, widely famed for his research on Malta fever; W. L. Mallmann, noted specialist in bacteriology and public health; E. H. Lucas, a horticulturist and outstanding plant breeder who was a member of the pre-Hitler Board of Agriculture in Austria; and E. W. Lewis, assistant professor of botany.

They began to test plant filtrates and extracts made from various parts of plants. They fully confirmed earlier results and went further. The leaves of the Scotch thistle, garlic, and onions were all found to have marked antibiotic properties. Successful tests were also made on rhubarb, the leaves of the mullein and peony, and the fruits of blueberry, currant, mountain ash, and honeysuckle.

Not all parts of a plant may show antibiotic qualities. But specific substances have been isolated which are effective against such bacteria as our old friend *staphylococcus aureus*, which must have afflicted Job, because it causes boils, and also against those bacteria which cause blight on beans and black rot on cabbage. This reminds us that certain plant diseases have also been treated successfully with

penicillin, and maybe we are on the verge of something quite new in plant pathology here.

The work is still in its initial stages. But the investigators feel encouraged by the fact that Pasteur has been found once to have reported that onion juice prevented the growth of certain microorganisms. Immediate practical results in the field of agriculture may be the control of seed-borne plant diseases by treating the seed with antibiotics.

The possibilities in the field of human medicine are even more arresting. Not only may plant extracts be applied to solve certain food-spoilage problems, but was the old plant doctor partly right when he offered herb remedies? Has the carnivorous cat a sound idea when it turns to grass if ill? Incidentally, the writer has a cat with a perfect passion for lettuce. He should be interviewed to find out what the idea is.

Remember onion syrup for colds, mullein leaf for poultices, catnip tea, raspberry leaf tea, and others? For years garlic has been an ingredient of proprietary remedies of all sorts recommended to cure almost all ills, while many have had sublime faith in onion therapy. Was there a grain of truth here, mixed up with bushels of falsehood's best chaff?

The Roman philosopher Cato recommended the use of mashed cabbage to break up and heal bruises. Cato wouldn't know he was right in step with modern science. For C. S. Pederson and his associates of the Geneva (N.Y.) Agricultural Experiment Station discovered recently that a number of undesirable bacteria often found on cabbage leaves disappear completely when the plant is cut up and fermentation to make sauer kraut begins. Cabbage juice contains some germ killer.

While some oldsters held that cabbage should be cooked six hours and six miles from the house, others have long thought it to be healing. Possibly it is. Since onion juice also has this germ-killing quality we may tend to associate healing properties with pungent odors! Yet there may have been some definite value to onions used as a folklore remedy to ward off infections and cure colds. Who knows for certain?

A whole new field of preventive medicine opens here. Possibly the antibiotics in living plants kill disease germs which affect human beings so unfavorably. Perhaps they even have some ability to combat viruses, or there may be still other substances in green plants which do this. The therapeutic value of the green salad and of green plants generally is now added to their long-known nutritive value.

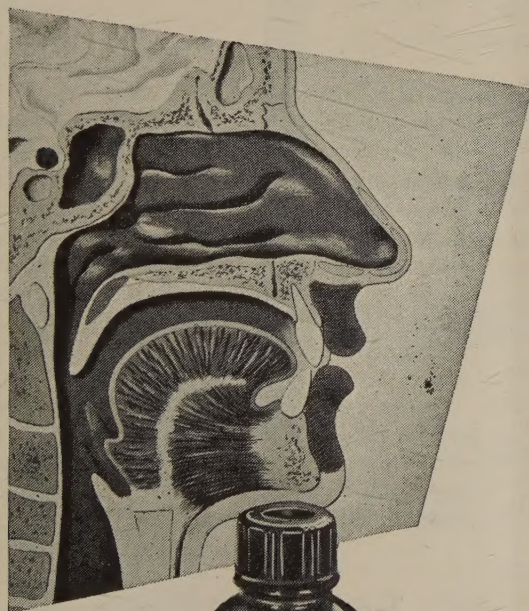
Germs and viruses also vary considerably in virulence from time to time. You can perhaps remember when scarlet fever was a dangerous, often fatal disease, then again when it was relatively harmless. Did that depend upon the prevalence of plant antibiotics?

Is the spring pick-up in health, noticed by so many, caused by the availability of fresh plant foods then especially rich in those penicillin-like substances? Can we soon hope to eat ourselves immune to infections? Can the antibiotics be prepared

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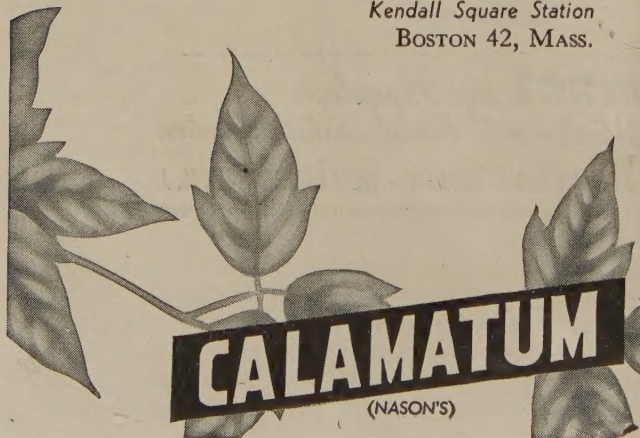
CALAMATUM (Nason's) has additional *therapeutic* advantages. It dries at once, adhering to the lesion, and exercises its full anti-pruritic action without loss by running or rubbing off, at the same time localizing the infection by preventing the spread of any exudate. The camphor and phenol content alleviates itching with the consequent desire for relief by scratching and thus helps to reduce the danger of secondary infection.

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from the higher plants in relatively pure form and then utilized to better advantage under fully controlled conditions? Some of these things are quite possible.

Since bacteria have begun to show powerful resistance to penicillin by developing stronger strains of themselves, research on antibiotics must continue to discover newer and more powerful germ killers. Just now the Department of Agriculture's Western Regional Research Laboratory has discovered a new and very powerful antibiotic, produced by molds growing on asparagus butt juice.

Asparagus butts have long been a waste product in California, where the laboratory is located, for three-quarters of the stalk must be sacrificed in processing and marketing. It is difficult to dispose of this waste. However the juices can be expressed from the butts and this offers an ideal culture medium upon which antibiotic-producing molds grow.

At the moment subtilin, a powerful antibiotic discovered at the laboratory, has toxic side-effects on animals. But it is slowly being purified and its poisonous properties reduced. It is a more powerful and widespread killer of microbes than penicillin, killing many germs penicillin does not harm. A great new field of medicine beckons here and is being rapidly exploited by several teams of research workers.

Granite Gables

Priorities on Passenger Cars

To the Editor:—

As a subscriber to the MEDICAL RECORD, I would like very much to have you write an editorial as to why the medical profession can not get any priority on passenger cars. I am a discharged medical man. Recently I applied to several auto dealers for a car and was told that there were none to be had, yet I knew for a fact that outsiders got new cars from these same dealers to whom I applied. I think that by publishing in your journal an appeal to the Medical Association to write to the government regarding the issuing of priorities to the medical man would do the trick. The auto dealers did honor these priorities prior to 1946. Why can not this be done now? I hope the MEDICAL RECORD will instigate something along the above lines.

W. E. Thompson, M.D.

Treatment of Early Poliomyelitis

To the Editor:—

I recommend silver treatment by intravenous injections and inunctions along the spine during the acute stage of infantile paralysis. This treatment promises to cut the disease short, not only on account of the chemical affinity between silver and nerve tissue, but because silver has been successfully used in thousands of cases for the nonspecific treatment of general infections, characterized by a polymorphonuclear leucocytosis as it exists in the early stages of infantile paralysis.

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Feinberg, S. M.: Allergy in Practice,
Chicago, The Year Book Publishers, Inc., 1944, p. 502.

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The Story of Aralen

While the same chemical formula lay dormant in Nazi laboratories, stifled by German regimentation, individual initiative, judgment and the production power of free enterprise in the United States has produced what is known as Aralen, a new potent drug for the war against malaria which afflicts eight hundred million annually throughout the world, according to Dr. Justus B. Rice, vice-president in charge of medical research of the Winthrop Chemical Company, Inc.

Dr. Rice revealed for the first time the complete inside story of how Aralen was first synthesized in Winthrop laboratories, where the production problems have now been overcome. The tablets cure falciparum malaria, and relieve other acute forms of the disease three times faster than either atabrine or quinine. Unrestricted by government control, Dr. Alexander B. Surrey began his individual experiments on the particular chemical chain that eventuated in the synthesis of aralen, known chemically as 7-chloro-4 (4-diethylamino-1-methylbutylamino) quinoline diphosphate. The same drug was in Nazi hands but its importance was overlooked. In the United States as soon as possible after it was synthesized on March 1, 1944, experimental quantities were turned over to the National Research Council for screening and clinical testing. It was one of many different possible antimalarials submitted to the National Research Council.

In the hands of the National Research Council aralen became one of the 14,000 chemicals being tested as antimalarials, and after the most thorough possible experimentation for toxicity and potency with animals and human beings, it was announced as being an important medical discovery.

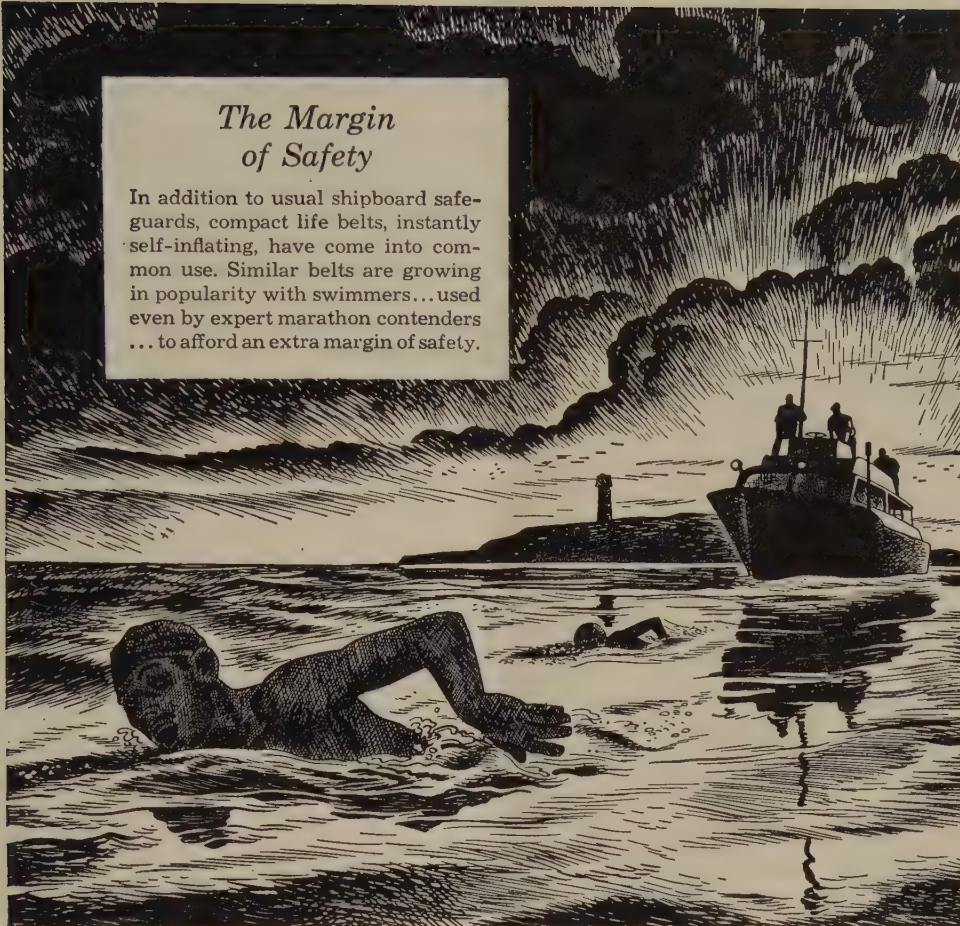
The National Research Council, well satisfied with aralen after having tested it on 5,000 subjects in the Army and Navy, according to Dr. Rice, believes it will replace atabrine and quinine. The drug promises to be a boon both to the military and to public health officials in areas where malaria is a constant problem because only two tablets a week are necessary to suppress the disease as compared with one tablet of atabrine per day. Aralen possesses the additional benefit of not discoloring the skin.

The drug is now being produced in tablet form and a stockpile is being built up for general use in this country. Quantities are being sent for experimental purposes to South America, Puerto Rico, the Middle East, and other malaria ridden zones of the world. It is expected that within a few weeks supplies of aralen will be available to physicians in this country.

Winthrop Chemical Corporation supplied the National Research Council with more than three hundred thousand tablets of aralen for the experiments. At Statesville, Dr. Alf Alving, professor of internal medicine of the University of Chicago, supervised the experiments, while the United States Public Health Service conducted the tests in Atlanta.

The Margin of Safety

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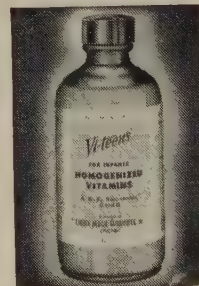


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It is stated that furacin, the active ingredient in this preparation, is a highly bactericidal and bacteriostatic nitrofurane (5-nitro 2-furaldehyde semicarbazone), and was developed after years of investigation of the antibacterial properties of chemicals based on the furan ring. It is said to be effective against many gram-negative as well as gram-positive organisms, and is indicated for treatment and prophylaxis of surface infections. It is low in toxicity and sensitization is infrequent.

"Shell Shock" Cases In World War II

Hysteria, the so-called "shell-shock" of the first world war although probably a majority of its victims never heard a shell fired—persisted on a greatly diminished scale among American troops in the last war, according to an announcement from the Surgeon General's Office.

It is predominantly a mental malady of the last generation. Essentially it is manifested as a syndrome which simulates, without organic basis, some pathological physical condition. A victim will develop, for example, a paralyzed arm but physical examination shows that the paralyzed area does not follow any single nerve or group of nerves. A man may be suddenly stricken blind but nothing wrong can be found with his eyes or optic nerve.

A hysteric is not consciously faking. For all practical purposes his arm is really paralyzed or his eyes sightless. Questioning often will reveal that the victim has had a hard blow on the arm or gotten a bug in his eye. If such a condition is not recognized it may persist for years and the organ involved may actually become useless permanently.

At about the time of the first world war this was common enough both among the military and civilians. On the part of the soldier it was an unconscious flight from danger. A hysterically paralyzed arm was a means of running away without suffering any of the penalties.

Shortly after the war psychiatrists began to report that no hysterical cases were coming to their offices any more. Instead they were getting more and more cases of so-called "anxiety neurosis", an overwhelming fear without specific physical manifestations. It was explained that the pattern of reaction of the individual with a somewhat unstable nervous system was changing with the times. Hysteria was a disease of a simpler environment.

They talked of "anxiety neuroses", "combat fatigue", and the like. For the most part, they were right. But, according to a study just reported by Lieut. Col. David B. Davis and Capt. John W. Bick of the Army Medical Corps, about one out of five of more than 1,000 neuropsychiatric cases returned

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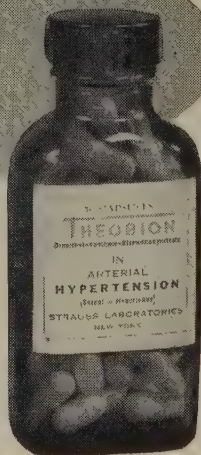
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to one American army hospital from overseas was actually a victim of hysteria.

"It is evident that hysteria was not of infrequent occurrence in World War Two", they conclude.

Psychoneurosis and Malingering

In a recent issue of the *University of Michigan Law Review*, Dr. Moses Keschner, Columbia University, declared that some physicians, lawyers and insurance adjusters had a wholly unjustifiable habit of confusing the simulation of illness with psychoneurosis. He pointed out that they were two distinct and entirely different clinical entities. A psychoneurosis was an actual illness in which unconsciously developed symptoms of physical or mental disease offer to the patient a possibility of solving his inner conflicts and fear of loss of security. The malingering practiced deception consciously with the prospect of financial gain or of deriving some other advantage.

"Both the reason for the symptoms and their development are not consciously understood by the psychoneurotic," Dr. Keschner said. "He tells the truth or what he believes to be true; he honestly believes that he is afflicted with the condition to which he attributes his alleged disability. In workmen's compensation cases, it may be true that neither the malingeringer nor the psychoneurotic wants to return to work, but the former is aware that he could go back to work if he chose, while the latter either is actually unable, because of his neurosis, to return to duty or honestly believes himself to be so."

Simulation might be defined as a wilful, deliberate and fraudulent imitation or exaggerating of illness intended to deceive the observer for the purpose of gaining a consciously desired end, he continued. Being conscious of the deception and fraud was the determining factor in what constituted malingering. Simulating a physical or mental disease was usually resorted to by the following groups: 1, by persons who have sustained an injury, with possible disability benefits or of collecting damages by charging negligence; 2, by persons desiring to collect insurance benefits for disability; 3, by those seeking to escape the draft or by "goldbrickers" in the armed services seeking to escape certain duties, and 4, by persons who wish to avoid some legal or other responsibility.

Dr. Keschner gave the following advice on how to detect simulators. Most simulators are readily detected because they grossly exaggerate their "manufactured" symptoms. Unless he is "well tutored", a simulator resents examinations and will do anything to prevent them; he resists all efforts at cure. This is in marked contrast to the neurotic who requests repeated examinations and is eager to submit to any form of treatment. During the examination, a simulator avoids looking the examiner straight in the face; he resents being questioned and his answers are either noncommittal, hesitating or absurd.

The remainder of the article was devoted to practical methods of detecting simulation of various diseases.

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New Process to Aid Conquest of Beriberi

Dr. Max F. Furter, Dr. William M. Lauter, Elmer De Ritter and Dr. Saul H. Rubin of Hoffman-La Roche, Inc., Nutley, N. J., have reported that new hope for the conquest of beriberi, the vitamin-deficiency disease that plagues the rice-eating millions of the Orient, is provided by the development of a process for enriching white rice with synthetic vitamins and minerals, according to *Industrial and Engineering Chemistry*, a publication of the American Chemical Society.

Beriberi, which is characterized by multiple neuritis and general debility, is caused by an inadequate supply of vitamin B₁, the antineuritic vitamin. Although the original brown rice contains thiamine, eighty percent of the vitamin is removed in the milling of natural rice to obtain the white polished product preferred by most rice-eaters, the report stated, adding that beriberi is found principally in regions such as China, Japan, India and the Philippines where people live on diets containing large amounts of polished rice.

"While the loss of thiamine is the outstanding deficiency incurred in the milling of rice, other nutrients suffer similar fate," the report declared. "As a consequence of the low content of certain factors, such as riboflavin (vitamin B₂) in the original brown rice and of high milling losses for others, white rice is a poor source of these nutrients."

Recent studies have concentrated on the possibil-

ity of enriching white rice, the report stated, noting the analogy between this development and the enrichment of white bread. The so-called Roche process for enrichment described in the report is said to be relatively inexpensive. It entails preparation of a fortified premix on a rice basis and dilution of the premix with ordinary white rice by simple mixing, in the ratio of one premix kernel to two hundred ordinary kernels, so that the presence of the premix will not be noticed by the eater. The premix consists of white rice coated with solutions containing synthetic thiamine, synthetic niacin, which is the pellagra-preventive factor in the vitamin B complex, and iron. Riboflavin, a growth-promoting factor, is excluded because of its yellow color, the report explained.

The premix is protected against washing losses by an edible, water-resistant film, so that any loss of nutrients incurred in washing enriched rice results almost entirely from the effect of washing on the untreated white rice kernels.

It has been found in tests with human beings, that the protective coating on the premix kernels does not interfere with the physiological availability of the vitamins in the enriched rice even when the components of the coating are present in amounts twenty times greater than usual.

* * *

Ulerythema ophryogenes, named Taenzer's disease by Unna, was described by Paul R. Taenzer (1858-1919), a dermatologist of Bremen, who was a coworker with Unna on staining reactions.

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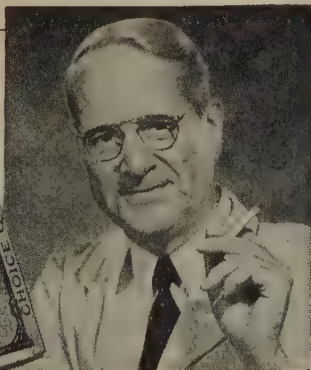
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Better Prosthetic Devices

Dr. Paul E. Klopsteg, chairman of the committee on prosthetic devices, through the facilities of the National Inventors Council, Department of Commerce, issued an appeal to American inventors and mechanical engineers to submit ideas and suggestions for better prosthetic devices. He stressed the urgent needs of seventeen thousand war amputees and an estimated annual minimum of twenty-five thousand civilian amputees. Among the more pressing problems are the urgent need for improved ankle, knee, hand, wrist, and elbow joint mechanisms; materials lighter than those now being used in artificial limbs, but with sufficient strength; new fabrication methods; studies of the motion of joints, of the forces most often encountered in walking and working, and of the statistical distribution of the sizes of body parts; improved fitting procedures and techniques for describing and teaching these procedures.

The committee on prosthetic devices was set up in April, 1945, under the sponsorship of the National Research Council of the Office of Scientific and Research Development. It is now supported jointly by the Army and the Veterans Administration. Consisting of three orthopedic surgeons and three engineers, the Committee initiates, supervises, and lends financial support to research institutes and laboratories willing to undertake special research problems for improving prosthetic devices.

The special research programs now being sponsored by the Committee include the following: 1. A

motion study of normal and amputated persons is being made by means of high speed x ray photography. 2. An anthropological study of 2,800 persons, representing a cross section of the population, is being made with a view to standardizing artificial limbs and reducing the need for individual fittings. 3. Using slow motion pictures, a study of the motion of joints is being made. Stainless steel pins are inserted into the leg bones under local anesthesia. Ping-pong balls are attached to the protruding ends of the pins and photographed. 4. The tiny action currents set up in muscles during use are being studied to determine the sequence of muscular operation in walking.

5. Other studies are concerned with a controlled rotary wrist mechanism; a hand which will combine the utility of a split hook with better appearance; a knee that will bear weight when flexed; and better ankle mechanisms and feet.

Members of the Committee have prepared a report especially for engineers and inventors, summarizing its work over the past year and analyzing problems as yet unsolved. A mimeographed copy of the report will be mailed free of charge upon request to the National Inventors Council.

The National Inventors Council is cooperating with the Committee by soliciting and screening ideas, suggestions, and inventions for improving prosthetic devices. Proposals submitted to National Inventors Council by engineers and inventors are carefully analyzed. If found meritorious, they will be forwarded to the Committee on Prosthetic Devices for further investigation and development.

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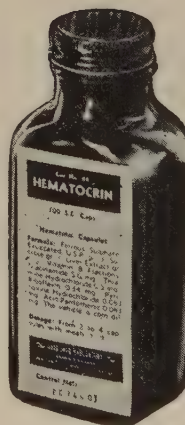
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Critique

Good Heavens!

Science Progress for April 1929 (this excellent British periodical was a war casualty) remarked "There are 54,146 British doctors, but we doubt whether one in a thousand has ever added materially to public knowledge of medicine." Why were they paid large fees then, while experts at medical research got small salaries? Jenner got thirty thousand pounds for his discovery from Parliament. The Canadians gave the discoverers of insulin a fixed income.

Why Christmas?

The reason the church fathers transferred the celebration held January 6th to December 25th and called that Christmas instead was because the heathen had celebrated December 25th as the birthday of the sun. They then kindled lights as a token of festivity. The Christians took part in these heathen festivities and solemnities. When the doctors of the church observed this they resolved that the True Nativity should be celebrated on December 25th and the festival of the Epiphany on January 6th. It had nothing whatever to do with the birth of Jesus.

Gastric test meals

Just how much can you depend upon the results of the average gastric test meal, when the patient is highly nervous and in a manifestly abnormal condition, the meal itself is unpalatable and unsavory, and the subject has a foreign body of considerable size in his gullet? These questions were raised editorially in the *Lancet* for April 27, 1929. Are they yet answered? It was suggested that sometimes the unsavory semiliquid slop called a light diet was not best for patients either; they needed the stimulation of a well-cooked chop!

Obesity

Evans and Strang announced a departure from the usual methods of treating obesity in the *American Journal of Medical Science* for March 1929. Instead of cautiously reducing diets of the obese 14-15 calories per kilogram, with resulting weight losses of 6 to 8 pounds a month, they gave the obese half as many calories, say 6-8 per kilogram, and obtained rapid weight reduction. A method was used to calculate the correct diet for the ideal weight, or the desired weight. More than sufficient protein was given to keep the patient in nitrogen equilibrium—1 gram per kilo. Sufficient carbohydrate and fat were given to provide 25 calories per kilo, the two being so distributed as to make the ketogenic-antiketogenic ratio 1.5:1. More details will be found in the journal named. Patients so treated, 111 of them, lost weight rapidly, were not hungry, remained cheerful, did not have headaches, and underwent reduction in elevated systolic blood pressure. A sense of well-being could be produced on a diet as low as 600 calories! This offers sharp contrast to the irritability and cachexia seen on more generous diets not planned on basic metabolic principles. Most menstrual disorders common to the corpulent were corrected by diet alone. Wonder if this method is still used or what?

What farmers think

A woman farmer wrote in to the *Nation* of March 13, 1929, and gave the Department of Agriculture a dressing down largely because it seemed so determined to fight tuberculosis in her cattle. She said she had tried tuberculosis-free cattle and they refused to eat, had watery eyes, stood hunched-up, and would not gain in weight, so she sold them. She declared Department statistics were gathered at haphazard, yet the Secretary used them to make all sorts of prognostications. But it was the tuberculosis-testing of cattle that got her. She believed the test didn't show much of anything anyway and besides, since most human beings had had tuberculosis at some time and recovered, she couldn't see why a little spell of it would injure her fine Jerseys. Nevertheless tuberculin-testing of cattle has gone on and the herds of the nation are being freed from the disease, which is a menace and not just a little thing like a brush with the chicken pox. Owners are paid indemnity for cattle that have to be slaughtered, and they get salvage also. The decline in tuberculosis in meat animals has been tremendous. Hundreds of thousands of tubercular cattle have been detected and eliminated. Nor are Department statistics of any kind collected at haphazard. It has in it one of the foremost economic and statistical institutions in the nation, the Bureau of Agricultural Economics. That has been true for many years. Its statistics are unusually reliable and meaningful.

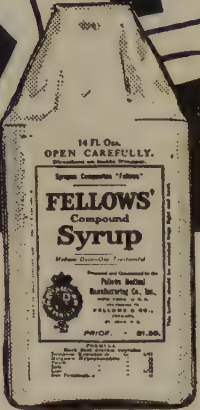
Poor people

Addressing the New York Academy of Medicine in January 1929, its then president, John A. Hartwell, said, the problem of giving medical treatment to the poor "will not be solved by the argument that the earning capacity of doctors will be lessened by" the opening of more free and low pay outpatient and other clinics. "Patients seek treatment in these institutions because their experience leads them to believe they can secure better care in them than can be secured in the private offices which are at their disposal. We must realize that the average prospective patient has no means of knowing where he may find adequate treatment within his ability to pay for it. He is not informed as to the relative merits of different doctors and until we can accept as a premise that he will necessarily fall under the care of a careful and competent physician, we must feel sympathy with those who seek relief from an institution operated, in most instances, by a carefully selected personnel. Applicants give as a common reason for seeking treatment in one of these institutions where careful records are kept, that they have failed to find relief in one or more private offices. If, therefore, these newer developments are able to meet a just demand in the most efficient manner, the public will seek them the more insistently. Unless we provide them voluntarily, they will be forced upon us, because we cannot defend the position that any group shall be deprived of the best service that can be furnished, as long as we stand on the platform that we are responsible for the health of the community."

THE CRITIC

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VOL. 159, No. 9

SEPTEMBER 1946

WHOLE No. 2764

THE NEED FOR CONTINUED SUPERVISION AFTER OPERATION FOR THYROTOXICOSIS

ABRAHAM O. WILENSKY, M.D.
New York, N.Y.

Thyrotoxicosis is a complicated clinical entity with a host of protean associated lesions and complications which continuously react among themselves to the furtherance of the total disease and the resulting detriment to the individual. When operative treatment is found advisable and successfully carried through, it must be remembered that the latter only causes a break and disorganization of the disturbance at the thyroid point and that all the other inter-related factors remain intact.

It must, therefore, be that the treatment of the thyrotoxicosis is necessarily not always completed by the successful outcome of the operation and at the time of discharge of the patient from the hospital. Because of these factors, further observation, supervision, care and treatment are compelled thereafter by continued or renewed activity of one or more of the following associated and/or complicating lesions and conditions:

1. Allergic Factors

The underlying allergic predisposing makeup of the individual with a characteristic emotional and otherwise neurological instability, which is necessary for the development of any thyrotoxicosis and without which the latter would never have developed in the first place, and cannot develop after any operation.

2. Endocrine Complications

Associated lesions in other ductless glands, especially the pituitary and the thymus: The role of the pituitary gland as the essential pacemaker in all thyroid disturbances is well known. In addition, the work of Okkels (5,6) and of Marie Krøgh (3,4), have demonstrated a rough relationship between the Golgi apparatus, and the pituitary gland with regard to the discharge of thyroid secretions.

The earlier observations of Blackford and Freiligh (1), and the later ones of Giordano (2) of the Mayo Clinic, showed that thymus hyperplasia occurs in from one-half to two-thirds of the cases of toxic adenoma and of thyrotoxicosis. Should this hyperplastic condition be present, and symptoms persist in the postoperative period, the question of further treatment may arise either by additional operative means, or by radiotherapy.

3. Psychosomatic and Neurological Manifestations

Such disturbances form an important part of the subjective symptomatology in many patients with thyrotoxic disease. Sometimes the symptoms seem trivial; and at other times they show a wider and deeper psychiatric disturbance. In any event they frequently, if not always, dominate the clinical picture to the apparent submergence of all other symptoms; and, sometimes, they mislead one to the extent that the underlying thyrotoxicosis is not recognized. The following instances are characteristic of some of the cases:

CASE I.—An otherwise lovely young married woman with two handsome children gave as her most important symptom, the fact that at the slightest provocation and frequently without, and at most inopportune and embarrassing times, there would be an intense and uncontrollable desire to urinate, which, when not gratified immediately, would be followed by the emptying of the bladder wherever she chanced to be, on the street, in the house, and even among guests in the drawing room. The rest of the subjective signs were apparently trivial, but there were well marked objective signs of thyrotoxic disease including an elevated basal metabolic rate. Following a successful subtotal thyroidectomy, the patient felt well and all symptoms disappeared. Nevertheless, within the year, the bladder symptoms returned and persisted and were most difficult to control by any kind of treatment including psychiatric therapeutics.

CASE II.—In another male subject, the most important symptom in the patient's mind was fear. Here, too, there were in addition the usual symptoms and objective findings of thyrotoxic disease including an elevated basal metabolic rate. Even though the subtotal thyroidectomy was successful in all other symptoms and manifestations, this fear complex never disappeared entirely.

4. Associated Parenchymal Hepatic Lesions

Various degrees of an essential parenchymatous lesion of the liver are found: (a) fatty degenerative changes, (b) focal necroses, (c) simple atrophy, (d) various degrees of toxic atrophy, and (e) some cirrhotic changes. Disturbances of hepatic function are easily demonstrable. The severity

of liver damage has close relations with the degree and duration of the thyrotoxicosis. Sometimes fatalities occur both without and after operation which are directly attributable to the liver lesion.

5. Associated Heart Lesions

As is well known these result from thyrotoxic excessive action, and are usually of the myocardial variety. There are frequent secondary renal lesions. All of these need constant supervision and care after any operative procedure as well as before.

6. Diabetes

Glycosuria may be an independent associated condition, or may be directly attributable to the thyrotoxicosis. It is needless to emphasize the care of any such metabolic disturbance after operation.

7. Rhinological Infection

This is another condition that may complicate the thyrotoxicosis. There is the frequent question as to the advisability of taking care of this before any subtotal thyroidectomy is done, or whether the latter should be done first. In any event the rhinological infection frequently causes postoperative hyperthermia approaching the grades seen in a true postoperative thyrotoxic crisis. The rhinological infection must be completely controlled later if permanent good results are to be obtained.

CASE III.—In a man in the third decade of life, a severe thyrotoxicosis was associated with a moderately severe infection in the throat, nose and accessory sinuses. It was decided to clean up the rhinological part of the condition first and this was done as successfully as it is usually possible to do. Nevertheless, there was an immediate hyperthermia directly after operation, the temperature range going as high as between 104 and 105. The rhinological condition relighted. There was a very stormy postoperative convalescence, so much so that, at one time, it looked like a true postoperative thyroid crisis. However, he made a good convalescence finally and was discharged from the hospital well.

Predisposition

The most important factor of all of these is the underlying predisposing condition—an instability of the emotional makeup and neuropsychiatric background—which as time goes on undergoes, in addition, an allergic sensitization, so that the exacerbations, recrudescences and crises which happen after operation, or occur later, take on the characteristics of an allergic response. Indeed, a postoperative crisis is to all intents and purposes a laboratory experiment; there is the underlying predisposing factor, the repeated sensitization by repeated or continued toxic activity, the active allergin, the operative insult, and the “take”, the postoperative crisis. The latter is further characterized by its unpredictability, by its suddenness and overwhelming effect, by its hyperthermia, etc. Truly, this is a laboratory experiment unconsciously done without any thought of its being so.

Could one eliminate this fundamental allergic factor, one might confidently expect a cure in all unoperated and operated cases. But given this fact, our most important task after operation is to eliminate

the “allergin” that brings on any recurrence. In clinical practice, the most important allergic causal precipitating factor with which one has to contend, is the return of the individual to his previous surroundings and environment with all of the physical and mental insults which this entails, perhaps even more so after operation than before. Could one eliminate these, again one might expect a permanence to the immediate subjective cure which the operation brought about.

One must use the term “subjective” cure advisedly; for it is only a subjective cure. If one examines these patients after an appropriate interval after subtotal thyroidectomy, one discovers the astounding fact, that, no matter how much the patient exhibits a subjective cure,—i.e., says that he feels well and is able to carry on his work,—he is still the same individual: that the four cardinal objective symptoms, tendency to a tachycardia, the nervousness, the tremor, the exophthalmos are still present and elicitable; and that he is still subject to an allergic thyrotoxic response, when the proper environmental or other allergin is presented. Such conditions, compel all postoperative supervision with the purpose of removing as completely as possible all of the factors which can precipitate a recurrence of activity of the thyrotoxicosis.

The next most important problem is the psychosomatic or neuropsychiatric aspect of the disease. Practically, it is so, that an established mental and/or emotional disturbance is rarely relieved by operation, persists in lesser or greater degree, is most difficult to control, and is rarely completely or even partially amenable to any kind of therapeutics. The other manifestations may be completely removed, but this psychiatric problem remains to torment both the patient and his physician.

In the light of the new knowledge regarding hepatic parenchymal disease in general, sufficient time has not yet elapsed to enable one to evaluate the possibilities for perfect anatomical cure, or for later progression of the liver lesion. It stands to reason, therefore, that symptoms may continue and even become more marked, and under these conditions, aggressive action may be demanded at times. The degree of any improvement, or the contrary, which may be judged by clinical observation, can, frequently, be confirmed by a regularly repeated series of tests of liver function. One single test of any kind of hepatic function is surrounded by so many “ifs” that its value is sometimes problematical. Nevertheless, a series of repeated similar tests gives invaluable information in regard to, and corroborates our clinical observation as to the progression or retrogression of any hepatic lesion.

Operation for thyrotoxicosis, exophthalmic goiter, etc., attacks the problem at the thyroid point of the circle of associated ductless gland disturbances and of other associated and/or complicating lesions. The possible consequences follow: 1, The main disturbance may lie in the thyroid; and if that be removed, it should happen that the best cure will be obtained; this is, very probably the condition in our best sur-

gical results. 2, The main disturbance lies elsewhere than in the thyroid. Then the result is problematical and our therapeutic effort is rewarded in direct proportion to the facility with which the exact point of the disturbance can be reached and to the accessibility for, and the beneficent reaction of the latter to other forms of therapeutics. Or, 3, the postoperative symptoms are due to other associated lesions—i.e., heart and/or liver lesions, etc.—and the results correspond to their susceptibility to treatment.

Resume

Surgical treatment of thyrotoxic disease is apt to lose its beneficent effect because of the presence of many associated disturbances in the circle of ductless gland activities, and because of the presence of other associated and/or complicating conditions which tend to cause renewal of thyrotoxic disturbances in individuals who are subject to the peculiar underlying psychosomatic background characteristic of this disease. Observation and supervision is, therefore, necessary after operation to assure a permanence of

cure and a prevention of any renewed thyrotoxic activity.

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12 EAST EIGHTY-SEVENTH STREET

IMPULSIVE OUTBREAKS IN CHILDREN

ALFRED GORDON, M.D.

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Among very many features characteristic of children at any age in their normal or pathological life, impulsive acts deserve special attention because they enable us by their nature to determine with considerable accuracy not only the child's makeup but also, what is more important, the outlook regarding his or her future mental health. The knowledge of this special side of the child's life is important for preventive measures. Our vast interest in children embraces so many important phases, chiefly from the point of view of foreseeing calamities and tragedies in adult life, that an elaboration even of one of the many abnormal manifestations of the valuable young life will present sufficient food for thought. Having had the opportunity of observing this special feature in a large number of children, I consider myself warranted to submit it for repeated consideration. The subject is too important to be overemphasized.

A reflex act is the principal law of nervous activity. A pure simple reflex is automatic. As we advance in our development, new attributes appear and serve the purpose of coordinating or controlling the tendency to direct reflex action. Otherwise speaking, they transform a blind force into a conscious and determined one, viz., into volition.

Impulsive actions are the expression of a reflex phenomenon, consequently they are physiological as long as they remain subordinate to the cortical centres. As soon as this subordinate equilibrium is interrupted, the impulsive acts become pathological.

All impulses may be endogenous, originating from internal motives; they may be strong or imperative, followed rapidly by motor phenomena; they may be

aberrant or dependent upon exigencies of life; they may be conscious but difficult for inhibition; finally they may be unconscious. The chief characteristic lies in the unusual rapidity or else the suddenness of the impulsive process, also in their frequent repetition in a paroxysmal manner, finally in the want of parallelism between the degree of awareness or unawareness of the impulsive act and the degree of loss of memory with regard to the impulsive act.

From a clinical point of view impulsive acts may be purely motor, in which the act follows the stimulation immediately; psychomotor, in which an emotional element is intermediary between the stimulation and the terminal act; finally psychic, in which the intermediary emotional element is long, painful and accompanied by an inhibitive force. In the latter form there is lucidity of mind, but the patient struggles, tries to overcome the irresistible desire.

From the point of view of final results, impulsive acts may be manifested in the following form: a, in gesture or words; b, in ridiculous acts; c, in stupid or extravagant acts; d, in repulsive acts; e, in ambulatory outbreaks (patient wanders off aimlessly); f, in committing thefts; g, in erotic behavior; h, in destructive acts; i, in incendiary acts; j, in violence against one's self or others; k, in intoxication.

From this brief enumeration one sees the vastness of the problem. It would require perhaps a volume to describe all the various manifestations. They are all valuable for diagnostic purposes and particularly interesting from a psychological viewpoint. Psychoanalysis will no doubt reveal hidden motives and causes for each of them. I will confine myself for the present to a single variety of impul-

sive acts which I had the opportunity to observe on thirty-seven children of all ages. Because of its practical interest I shall consider it somewhat fully, although concisely. I have referred to the so-called "fugues." As we shall see later, the misrepresentation of this phenomenon may lead to gross errors, especially in counselling parents and teachers with respect to the child's present and future. A reservation must be made at the outset of our discussion, namely, that this impulsive phenomenon will not be considered from the standpoint of insanity. Fugues may occur in many psychoses, but my intention is to describe its occurrence in the life of children free from grave mental disorders, in which, of course the manifestation under discussion is the result of suddenly appearing hallucinatory images or delusional conceptions.

In order to make the subject somewhat lucid a few examples of my series of cases will be very briefly described:

CASE I.—A boy, aged eight, brought up in an atmosphere of gentleness and refinement, had three attacks of the same character at intervals of four or six months. The first time he suddenly disappeared over night. He was found asleep under a bridge. The second time he stole one dollar from his mother and ran off. He was found at Broad Street Station. The third time he did the same as the first time. When repeatedly questioned on the motive of his acts, his reply was that an irresistible desire overwhelmed him to test independence. "This sudden idea passed through my head and I could not help myself."

CASE II.—A girl, aged six who had a young mother of twenty-five, whom she always saw surrounded by admirers, had a tendency to describe dreams of the most fantastic character. She saw herself flying in an airplane or travelling on steamers. She also had frightful dreams, some of which were typical of night terrors. Without an apparent cause she suddenly became morose, seemingly depressed. During a period of two years she made six fugues; she would suddenly disappear and for hours could not be found. She would return home by herself, being incapable of giving an intelligent account of her aimless acts.

CASE III.—A girl, aged eight, having passed through a series of infectious diseases (measles, pertussis and diphtheria), developed symptoms of this character: In the midst of a conversation, or at the table, she would suddenly walk off for one minute and then stop, being surprised at her actions, and at no time could she recall what occurred.

CASE IV.—A boy, aged eleven, would suddenly expose his genitalia. A few minutes later he would find himself in this position, would cry and hide himself, ashamed of his act.

CASE V.—A girl of ten, upon return from school, would suddenly place herself in a position of a teacher, close her eyes and perform serious gestures, calling out names of supposed pupils, reproach them, correcting their supposed errors. At the end of five or ten minutes she would suddenly open her eyes and look around without fully realizing what occur-

red. However, in an hour or two she was able to recall some portions of her acts. The amnesia evidently was not complete nor profound.

CASE VI.—A boy, aged twelve, the only child of a widowed mother, unusually precocious in his mental development, read a great deal, sometimes until three o'clock in the morning. He developed unusual ideas concerning parenthood, filial attachment, and especially the marriage problem. At his tender age he did not believe in marriage; he frequently spoke of personal freedom. On four different occasions he disappeared from his home and each time his reply was that the desire to be free was so overwhelming that he could not resist; he did not plan or prepare himself for the flight; sometimes the idea came in the middle of the night after disturbing dreams.

These six examples are sufficient to illustrate the nature of the disorder under discussion. Our entire series of cases presents an identical picture with some slight variations as to the circumstances in which the flight was made by the little patients. We can therefore define a fugue as a paroxysmal, impulsive act consisting of sudden abandonment of one's own domicile without a reasonable motive. Another characteristic feature of this act is the irresistibility of the desire to accomplish it, in the midst of preservation of consciousness and memory. Exception to the latter is found in those cases, in which, as in Case III of our series, there is complete amnesia of the act. They are instances of epilepsy in which a seizure is manifested in the form of an ambulatory act with loss of consciousness and of memory as to the act itself.

In all fugues the patient is unable to measure up or to consider the consequences. They are not different from other impulsive outbreaks mentioned in the beginning of our thesis, such as impulse to attack, to destroy, to burn, to tear, to use violence. They are all the final result of obsessive ideas, in which the irresistible desire to carry them out is so overwhelming that the individual succumbs to them without having time to consider either the consequences or the feasibility of such an act. Irresistible impulses of all kinds are observable in children of all ages as well as in adults, but fugues such as described above in the few examples are not frequent. During a period of twelve years I succeeded in collecting but thirty-seven cases of pure fugues in children free from serious mental disorders. May I reiterate my previous statement that in psychoses, fugues are not at all rare, but they are quite infrequent in individuals commonly considered sane.

The object of presenting this subject on the normal and pathological life of children is to call attention to the fact that, while impulsive acts in the form of fugues are observed in young individuals free from serious mental disorders, nevertheless their paroxysmal occurrences have a deep meaning an important significance. Children presenting these episodic manifestations cannot be considered as possessing a well-balanced equilibrium between the constantly arising internal motives and the cortical control. In all such cases the power of inhibition is

wanting or defective. Such children form a class of abnormal individuals. Indeed, if one analyzes the personal histories of every one of these cases, one is astonished to find many other peculiarities ordinarily not found in perfectly normal children. Frequently there are evidences of psychological and physiological as well as morphological deviations from normality. Instability, perverted mode of feeling and of acting, sometimes affective indifference, apathy toward the nearest or the dearest; sometimes unusual cruelty, extraordinary hostility towards those who never cease to show their love and affection. Tendency towards deception and lying is not uncommon.

In other cases, on the contrary, we find a normal intellectual development and even one superior to normal, a remarkable power of assimilating, an unusual memory, but alongside of these superior qualities there may be defective judgment and reasoning. In many of these cases we obtain a history of motor or psychomotor disturbances, such as paroxysmal attacks of choreiform movements, and spasmodic muscular contractions, of hysterical manifestations, of night terrors, of enuresis. Many of such children present physical stigmata of abnormality, such as high-arched palate, congenital strabismus, misshapen segments of the body and cranium, etc. When many of the signs of abnormality just enumerated are present, the task for the physician and parents is comparatively easy. In a number of such cases, however, those evidences of abnormality are not conspicuous and may be easily overlooked. In other cases the outward abnormal manifestations are seen grossly in impulsive outbreaks. Such was the case in the series of the present study. It is only the repetition of the fugues that arrested the parents' attention. In all such cases the fugues are but one of the many expressions of an abnormal or defective background. Running away from home aimlessly and without a motive while being surrounded with love and constant affectionate attention, in spite of the ever-present instinct of self-preservation, repeating the impulsive act again and again without an external provoking cause, such an act perforce originates in individuals in whom the intellectual and affective equilibrium is defective. Psychologically considered, fugues may be viewed as an insufficiency or a feebleness of reactive power; in other words, they are reactions of inferior quality expressed as an unconscious defense of the organism against conditions or situations in which the individual lives. It is a procedure of self-isolation with the purpose of becoming detached from the surroundings in which the individual is living. It is a psychomotor act of an abnormal individual.

Familiarization with such occurrences in young children will arrest our attention with regard to the management and therapeutic behavior. Upon the latter depends the future of the child. Once recognition of the phenomenon is made and a proper evaluation is accomplished, necessary measures should be undertaken as early as possible. A supposedly healthy child who has impulsive outbreaks such as previously described, even at the exclusion of any

other conspicuous mental manifestations, is to be considered abnormal. His mode of living, his mental development and his emotional life must all have a different direction from that applied to normal children. The preparation for the future, for the adolescent and adult period of life, should aim differently from the preparatory measures applied to normal life. Parents must be made to understand that children with such stamina are perpetually subject to outbreaks of another character besides their fugues; that their makeup is different from that of normal children; that their way of living, their occupational hours must be filled with tasks different from those which we supply normal children; that their cerebration must not be unduly forced or hastened; that their emotional life must be taken special care of; that, as the child grows, no definite plans must be made in advance as to a future vocation. In this particular respect it is wise to bear in mind that an occupation associated with great mental effort or with strong emotional features should not be thought of.

The characteristic features observed in abnormal children, such as previously described, particularly those which make their appearance episodically, are the result of emotional conflicts in the unconscious and conscious life. It is therefore important that in the management of such children our main efforts should be directed towards the emotional side of their life. Negligence in this special direction is bound to lead those children in the critical period of life, viz., puberty, to a complete mental collapse, and an incurable psychosis will then make its appearance. On the other hand, if the condition is fully recognized, and proper value attributed to it, those abnormal children may be guided safely to puberty, they may cross this critical period of life, enter adult life sufficiently prepared to meet obstacles and at the same time to be of some use to the community. The early appreciation of unusual manifestations in children, no matter how slight the latter might be or how isolated they may appear, will lead to proper conduct in therapeutic management. Upon such a diagnosis the prognosis and prophylaxis depend entirely.

Not infrequently an analysis of a single abnormal phenomenon will gradually lead to unearthing other important features which, all combined, will present a structure requiring our serious attention.

I have endeavored to present for thoughtful consideration a subject which is full of deep significance. It deals, it is true, with one phase of human behavior, but when analyzed it leads us in an ascending manner to a deeper insight of a child's constitutional makeup, the recognition of which may be rich in fruitful results. Clinically speaking, it establishes the proper diagnosis, prognosis, and management. The entire subject presents a very important problem not only for the physician but also for the parents. Recognition and proper evaluation of any abnormal phenomenon in children constitute a very instructive chapter in mental hygiene.

1520 SPRUCE STREET

A CASE OF LOCAL REACTION FOLLOWING THE ADMINISTRATION OF PENICILLIN IN BEESWAX AND OIL

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There have been a number of cases of local or general reactions following penicillin administration described in the literature. However, in relation to the vast number receiving penicillin therapy, the percentage of reactions is relatively small. Florey and Florey (1), in a series of 187 patients, had no reaction. In a series of five hundred cases treated by physicians under the supervision of the Committee on Therapeutic and Other Agents of the National Research Council (2), reactions took place in sixty-nine (13.8 percent). The reactions were as follows: fever in five, chills and fever in twelve, local thrombophlebitis at site of intravenous administration in nineteen, urticaria in fourteen, gluteal tenderness in region of injection in five, headache plus flushing of the face in ten, tingling in testicles in two, and muscular pains in two. The cause of the reactions could not be definitely ascribed to penicillin and may in all likelihood have been due to some impurity.

Lyons (3) regards urticaria as the commonest single complication and found it to occur in twelve (or 5.7 percent) of his series of 209 cases treated. It has occurred during any week of treatment, as early as the first day or as late as the fourth week. It usually develops during the time the patient is under treatment but may occur as late as nine days after the cessation of treatment. The wheals are widely distributed over the body. The condition usually continues for three to five days and responds to epinephrine or ephedrine. Subsequent courses of penicillin have been uneventful and not associated with recurrent urticaria in these cases.

Contact dermatitis in physicians and others handling penicillin has been described. Barker (4) tells of a case in a medical officer in charge of penicillin preparation who developed an acute dermatitis of the face and neck, edema of the eyelids and tightness of the skin of the entire face. A patch test was positive. Barker is of the opinion that the irritant cannot be described with certainty because present day products contain substances other than penicillin, though judged by its color, the penicillin powder used was of a high degree of purity. Similar cases have been described by Binkley and Brockmole (5) and Pyle and Rattner (6).

Michie and Bailie (7) report a case of eczema of the face following penicillin administration. The patch test was positive. They similarly conclude that it is impossible to state whether the reaction was due to penicillin or to impurities. Graves, Carpenter and Unangst (8) describe a case of recurrent vesicular eruptions following penicillin and Morris and Downing (9) report a case of bullous eruption.

Urticaria has been frequently encountered. (See Keefer et al, 2; Lyons, 3; Barker, 4; and Criepp, 10). Criepp (10) describes a case where penicillin

was administered in doses of 200,000 units daily for fourteen days with no reaction. After a three weeks' rest period, 120,000 units were given daily for six days, after the first dose of which course, massive generalized urticaria developed which persisted until cessation of treatment. Direct skin tests with penicillin were negative but passive transfer tests performed with the patient's serum yielded a positive reaction. This is of interest because Feinberg (11) found that individuals clinically sensitive to penicillin spores did not give a positive reaction to penicillin. It would seem therefore that there is no cross sensitization between penicillin (drug) and penicillin (spore) extract.

Freyhan (12) describes the case of a patient, receiving 25,000 units of penicillin four times daily, who developed a rather severe generalized pruritus over the whole body.

Asthmatic attacks following penicillin therapy have been described. Price, McNairy and White (13) tell of such an attack occurring two days after the cessation of treatment consisting of sixty doses of penicillin, each 40,000 units administered every three hours intramuscularly, the asthma being accompanied by fever and urticaria. Scratch tests were negative. The authors again infer that allergy was due to some impurity rather than to penicillin.

Hailey and Millard (14) tell of a foreign protein reaction after penicillin administration resembling serum sickness. Strazza (15) describes a delayed sensitization to penicillin likewise resembling serum sickness.

Kolodny and Denhoff (16) studied the reactions encountered in a series of 124 patients undergoing treatment with sodium penicillin. Approximately sixteen percent showed immediate reactions. Dermatological cases reacted in twenty-five percent and nondermatological in six percent of cases. Seven percent of the patients showed delayed reactions. No significant relationship was found between the incidence of reaction and previous penicillin therapy. Penicillin reactions did not recur consistently in all patients given additional penicillin therapy subsequently. Some patients reacted consistently. Others did not. The time interval between courses of penicillin bore no relationship to the incidence of reactions in the whole group. In a group of consistent reactors, it was found that a phase of relative energy existed for a period of five to seven days. There was no correlation between a past history of personal and family allergies, previous skin disease, drug intolerance, previous penicillin therapy or reactions referable to it, and the incidence of reaction. Contact dermatitis followed the local use of penicillin for skin lesions in four patients. Skin tests required a high concentration (1,000 to 2,000

units per 0.1 cc.). Of fifteen reactors tested, eleven showed a positive skin test.

Report of a Case

Mrs. J. K., aged forty-seven, German born American, had been in the United States eighteen years. For the past five years, she had worked in a cafeteria, otherwise she had done housework. She had been married since 1929 and had no children. Her chief complaint was dizzy spells and lately she had had trouble with her vision which had become progressively worse. Examination of her eyes by an optometrist had revealed nothing that could be corrected by glasses. The patient had had the usual children's diseases but never had had scarlet fever nor diphtheria, no serious illnesses, accidents nor operations. Her first menstruation was at the age of fourteen and had always been regular; she was still menstruating. She denied venereal infection. She does not drink or smoke.

Her present illness began on or about December 15, 1945, the patient for the first time in her life had a dizzy spell while on the street. She had a repetition of such spells frequently, these spells lasting but a short time. On January 20, 1946, at 7 a.m., the patient had a sudden attack whose significant features were unconsciousness, heavy stertorous breathing, slight cyanosis of the face, staring eyes and no response to calling, pinching, slapping or to the application of either hot or cold water.

First physical examination.—The patient was a slightly obese, well developed white woman whose apparent age corresponded to the stated age. Her face was slightly cyanotic; with no edema and no petechiae. She was lying in bed unconscious and did not respond to external stimuli. The patient was seen later in the day after the cessation of the attack; she did not remember having had such an attack but knew she felt slightly dizzy and uncomfortable. She had had no pain.

Subsequent physical examination.—The head showed no abnormalities. The eyes were both slightly protruding. The right pupil was round while the left was slightly oval. The right pupil reacted normally to light; the left was very sluggish. The eye grounds were negative. There were no pathological findings in the nose. The teeth were in good condition; the tongue slightly coated. The neck showed no swollen cervical or post-cervical glands. There was no adenomata but the thyroid was slightly enlarged. There were no distended vessels. The throat was negative; no swallowing reflex or gagging reflex. The chest showed symmetrical expansion upon deep inspiration; the lungs were normal to percussion and auscultation; the heart was not enlarged; no murmurs; rate 96; aortic and pulmonic second sounds of equal intensity; blood pressure 105-70. The breasts were fleshy and pendulous; no nodules or glands were palpable. The abdomen was slightly obese; no tenderness, no masses. The liver and spleen were not palpable. The pelvic examination indicated that the uterus was retroverted and was the size of a small apple. Vaginal mucosa was pale; scar in left groin 1 by 1.5 cm. in area. The

central nervous system indicated a slightly positive Romberg sign, knee jerks hyperactive, Babinski sign negative. There were no pathological reflexes with the exception of the slightly positive Romberg sign; strong dermatographism.

Laboratory reports.—Blood count: red blood cells, 5,000,000; white blood cells, 6,000. Hemoglobin 11.5 gm. Sedimentation rate normal; serology: Wasserman and Kahn tests were both 4 plus; spinal fluid: Kahn test negative. Cell count 178/3. Pandy test 4 plus. Protein 136. Colloidal gold normal.

Revised past history.—When the patient was told about her positive serology, she finally admitted that she had had an infection twenty years ago and that she had received three incomplete courses of antiluetic treatment.

Clinical course.—Antiluetic treatment was instituted. She was given daily 300,000 units of penicillin in beeswax and oil (Romansky formula) and had no reaction until the tenth injection, having then received a total of 3,000,000 units of penicillin. On this occasion, a lump the size of a cherry was felt on the spot where the last injection had been given. After the eleventh injection, the left and right areas of injection were inflamed and the entire area was hot and red but not painful. During that day and on subsequent days, the area around all the old injection points continued to appear inflamed. Thus, both sides of the buttocks were flaming red, intensively hot and of board-like hardness. Colorchrome slides of the right side of the buttock showed very distinctly, the infiltration, reddening, and swelling which did not proceed into the healthy tissue gradually but terminated abruptly. On the other side of the buttock, a smaller area of reddening and swelling was seen, as a sign that the inflammation was already about to be absorbed. This side was also inflamed, red and swollen just as the other. The patient complained of a feeling of local tenseness but not of pain. The temperature was normal and there were no chills, no malaise and no nausea. The patient remained ambulatory and continued to perform her household duties.

Since the patient did not wish to be hospitalized and it seemed inadvisable to continue the beeswax and oil preparation, it would have been necessary to continue with the penicillin treatment as intramuscular injections every three hours according to the technique ordinarily employed. Furthermore, the amount of penicillin administered thus far—3,300,000 units—was not sufficient treatment for the neurosyphilis. It was decided to give calcium penicillin in saline intramuscularly in doses of 100,000 units once daily. Amazingly, she failed to develop any reaction against the new injections and for the next two days different makes of penicillin in saline solvents in the above stated dosage were used. After four days, the intensive infiltration of the whole buttock musculature was abated but points of the injection themselves were still immensely infiltrated. Meanwhile, penicillin in beeswax and oil from another manufacturer was obtained and 300,000 units of this was administered. The next day, the old in-

filtrations were still present but there were no new infiltrations nor any flare-up of the former injections. Thereupon, daily doses of 300,000 units of penicillin in beeswax and oil were injected until a total of 7,500,000 units was attained.

The patient's general condition improved immensely and she did not have any more of the attacks previously described. Her vision had improved. Two months after the termination of the course of treatment, large lumps from the first injection series were still present; these gradually began to disappear.

Conclusions

1. A case has been described where a serious local reaction involving the skin over the buttocks as well as the gluteal musculature occurred following the administration of penicillin in beeswax and oil, 300,000 units per dose (Romansky formula), in a case of neurosyphilis, the condition arising after the tenth injection.

2. Subsequent penicillin in saline injections and also penicillin in beeswax and oil made by another manufacturer failed to cause a recurrence of this reaction.

3. It would therefore appear that either the patient was sensitive to some impurity in the first penicillin in beeswax and oil or that she had an allergic condition of an inconstant and variable nature either to impurities in penicillin or to penicillin *per se*.

4. A review of the literature dealing with reactions to penicillin is given.

5. As far as I have been able to determine after a careful search of the literature, no case precisely similar to mine has been previously reported.

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331 EAST SEVENTY-FIRST STREET

HYPOPARATHYROIDAL CHANGES OF THE TEETH IN ADULTS

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In children affected with tetany or showing the less important symptoms of latent tetany there is often an imperfect development of the teeth, and afterwards, in adult life, these organs have a peculiar appearance. Such changes can also occur in a fully developed denture (10). Many patients have had perfect teeth all their lives until they became ill, and relation has been found between dental changes and other symptoms of latent tetany of which they complained.

Erdheim (2) first, and later Toyofucu (9), found that parathyroidectomized rats develop spotted teeth because of defective enamel. At the same time Fleischmann (4) proved that when there were spots due to defective enamel there was a weak parathyroidal function, and not rickets as many physicians thought. In addition to this, Hesse and Phelps (6) and Fuchs (5) observed that all children with nuclear cataract had the same defective enamel. That

explains how in those cases with both normal and defective teeth the former were developed prior to the parathyroidal insufficiency and the latter after it (Spiegler, 8; Falta and Kahn, 3).

The experiences related by Weil (11) showed that following the resection of the parathyroid glands, in six or eight weeks the teeth developed white spots at testing, a poor calcification of dentine and were lacking enamel protection. Those teeth were brittle and prone to become ulcerated. When new parathyroid glands were transplanted normality was restored and the anterior trouble remembered only by a thin zone deprived of calcium.

The foregoing research proves that hypoparathyroidism alters the appearance of the teeth. The parathyroidal spot is yellowish and set deeply in a hollow corresponding to hypoplasia of enamel. One or several spots, resembling mottled teeth, may be found in each case, and these spots vary in size from

a point to the whole dental plaque. When there is one point, I find it easier to see with reflecting light. When several pointed spots develop together they form a line, or the linear lesion may be primary. In both cases it is sharply bounded by the healthy surface. Sometimes there is lack of enamel from the entire free end of the crown, and dentine becomes superficial. Lesions are usually confined to the labial surface of the teeth, most frequently of incisors and canines. This is not caries, but caries develops more easily and rapidly in parathyroidal teeth. That is why Wolf (12) tests the calcium metabolism, looking for hypoparathyroidism, when it breaks more than one tooth.

Case Histories

In all the cases studied, the teeth presented the following appearance:

CASE I.—This patient, a woman, had an excellent set of teeth, of which she was proud. When about forty years of age she complained of a certain sensitiveness in her teeth, the free ends of which became brittle, especially the incisors, canines and premolars. Breaking of this free end was progressive and when I saw her (she was then forty-eight years old) the dental plaques were a half or less of their former size. They looked like very short teeth of irregular length but normal width. Their color was in part bluish, because of decalcification, and in part yellowish, because of the hypoparathyroidism. Looking directly at the free border it seemed cut or eroded transversally, and was also swollen in some instances. Here I saw, from the outer to the inner part of each tooth, first the bluish enamel and afterwards the yellowish dentine. These teeth were not painful, but more sensitive than normal and crises of higher sensitivity announced increased activity of the destructive process. There was no dental caries in spite of an acid saliva. The progress of this breaking process would destroy the teeth completely in a few years, if treatment was not continued.

CASE II.—This patient was the daughter of the patient in the first case. She also had beautiful teeth and for a year had complained of increased sensitivity, which was demonstrated by electrical means. The free border of the teeth became sharper, bluish in color and showed very minute fractures. Eventually, the border became irregular because of the breakings, and that was exactly the first step in the progress of the destructive process encountered in the mother.

CASE III.—This was similar to the second case, without disturbances of sensitivity, but as the patient was a melancholiac, this sign lacked interest. The free border of the denture was irregular, like a saw, bluish and translucent.

CASE IV.—As in the first case, this patient's teeth had eroded borders but not to so great an extent. She did not complain of sensitivity, and did not have caries.

CASE V.—This patient was a girl sixteen years old, who had small teeth of yellowish color, greatly decalcified and with longitudinal striae. Dental caries was frequently found.

CASE VI.—The teeth of this patient, a woman, aged fifty-one, were somewhat more transparent than the average, and decalcified. Recently, yellow spots had appeared which resembled the yellow parathyroidal spot. No breaking of teeth was noted.

CASE VII.—In this case, only decalcified teeth could be demonstrated.

CASE VIII.—Teeth with a translucent border were present in this case.

ADDITIONAL CASES.—Three additional cases may be described, but all the patients were under five years of age. The importance of these cases depends upon the normal state of the teeth when erupted. Afterwards, in the first case (A) there was a hypoplastic enamel; in the second (B), breakings of the free border of teeth; and in the third (C), decalcified teeth.

Diagnosis of the Dental Troubles

It is important to differentiate this abrasion of the teeth, in the first instance, from that which occurs in rickets. No one symptom is sufficient to make such a diagnosis. Similar troubles may occur in osteomalacia, but we did not think of this disease because of its peculiarities, which were lacking in all the cases. The same can be said of celiac disease not correctly treated (Shelling, 7), and chronic icterus during teething, as these conditions were not presented in our cases. Hutchinson's teeth have a definite pathogenesis, and differentiation from Millian's black caries is difficult. In consequence, we must accept the diagnosis of dental troubles due to decalcification which, at its time, depends upon the low parathyroidal function, as we shall see immediately. I do not trust in the simply mechanical theory of abrasion in these cases.

If we state that the foregoing dental disturbances are due to hypoparathyroidism, what must we detect in order to accept the diagnosis of latent tetany?

We can read in Shelling's book (7) a trustworthy revision of symptoms and signs of the disease. The most important of these, he says, are the electrical reflexes pointed out by Erb. Then come in turn the following signs: Chvostek, Lust, Trousseau, Pool (and Schlesinger's modification), Schultz, and Hoffman (as Erb's sign is a troublesome test). Shelling does not mention Kashida's, Falta and Kahn's, Weiss', Escherich's, and other signs. According to most authors, Shelling does not rely on the accuracy of humoral chemistry as a serviceable test of parathyroid function. Nevertheless, he points out that concentration of phosphorus may be high, not only absolutely (more than four or five mgr. in each 100 cc. of blood) but relatively, if we relate it to calcium. The "alternative biological syndrome" is, according to Braine and Rivoire (1), the most important test in parathyroid pathology. It consists in the lessening or increasing difference, in relation to average, between phosphorous and calcium; less difference in hypoparathyroidism and the opposite in hyperparathyroidism.

The clinical picture is very significant in most instances, but it is not necessary to recite here what all readers know, but I must state for the exact com-

prehension of my writing the following facts: First, I found in my practice that calcium amounts are somewhat higher in Cuba than in Europe or the United States; and second, Chvostek's sign is often present without any relationship with parathyroid pathology. (I am working on these two subjects and hope soon to be able to write about them).

Symptoms Related to Hypoparathyroidism

Here are the facts which enabled us to establish the diagnosis of hypoparathyroid function in the foregoing cases:

CASE I.—In her childhood this patient had spasmodophilia. Migraine, epigastralgia (with vomiting, sweating and lipothymia); tremor, myoclonia, early canities, exaggerated reflexes, positive Chvostek's sign, etc., were the chief complaints she declared or we detected. It is most important to point out that epigastralgia was due in most instances to gastric tetany, as I saw by radiography, and have reported seeing once during the crisis a typical spasm of the right hand (obstetrical hand). Total calcium, 10.4 mgr.; diffusible calcium, 3.7 mgr. (low); phosphorus, 6.55 mgr. (high); phosphatase, 3.95 Bodansky's units. Diagnosis: Critical age and hypoparathyroidism.

CASE II.—This patient's mother was our first case, and her father was a diabetic. She was four feet eleven inches in height, and had early gray hair. She suffered from cramps. Total calcium, 11.5 mgr.; phosphorus, 4.5 mgr. Diagnosis: manic-depressive crises and insufficiency of pituitary and parathyroid glands.

CASE III.—This case was similar to the second one, and both so peculiar that we might think about some relationships among troubles of the teeth, early canities ("phanero's" overthrows), psychopathy and hypoparathyroid function. There were several diabetics in her family, a grandmother had Paget's disease, a grandfather was insane, and two brothers (and herself too) had spasmodophilia. Her reflexes were exaggerated, Chvostek's sign was very intense and Weiss' sign was positive. Once she intended to commit suicide. Diagnosis: melancholia and hypoparathyroidism.

CASE IV.—This woman was at a critical age, with some hyperpituitary reaction and suffering from an arteriosclerosis with evidence of aortitis. In her family there were many disorders of the ductless glands, especially diabetes, and cases also of migraine, urticaria and nervousness. In her blood the amount of calcium was 10.7 mgr. and that of phosphorus 3.4 mgr. Chvostek's sign was negative.

CASE V.—Overweight and hypoparathyroidism was the diagnosis. Blood calcium was normal, 11, but phosphorus was increased a little, 4.1 mgr. Chvostek's sign positive (II variety) and Escherich's sign was also positive. The reflexes were very active and the menses delayed and scanty. Fracture of bones twice, and from minimal causes. She walked long after the first year of age.

CASE VI.—This woman showed a clear clinical picture of hypovitaminosis (B complex) with psychosis and hypoparathyroidism. She had many

relatives with psychoses. She had cramps, a negative Chvostek's sign, and the laboratory findings of the blood examination were 9.5 mgr. of calcium, 3.6 mgr. of phosphorus and 6.5 Bodansky's units of phosphatase.

CASE VII.—A woman, twenty-seven years old; diagnosis, psychosis and hypoparathyroidism. She complained of cramps, Chvostek's sign was positive, and the blood calcium was 10.9 mgr.

CASE VIII.—A woman aged twenty-eight. Diagnosis: anemia, colitis and pelvic infection. Chvostek's and Escherich's signs were positive. Myoclonias were present. Blood calcium, 12.2 mgr. and phosphorus, 3.6 mgr.

Additional cases.—The first additional case was a girl aged five, whose mother suffered from spasmodophilia. She had also had attacks of an epileptic or eclamptic nature. The blood calcium was 9.75 mgr. and Chvostek's sign was negative. The other two cases, who were brothers, showed no important features, except the second (case C) who was very irritable and whose hands and feet were of reduced size (acromicria).

Additional note.—In all these cases treatment depended upon calcium and parathyroid therapy, which was effective in all instances, especially the first case (dramatic relief of pains). Sometimes vitamins, hormones, etc., were added as long as the need for them was indicated.

The diagnosis of latent hypoparathyroidism is difficult, as we may see, and so it was in most of these cases. I considered as a strong basis for diagnosis, the numerous familiar endocrinopathies and the results of therapy (with calcium and parathyroid hormone) when added to some other clinical symptoms or signs. Cases one, two, three, five and seven, were, undoubtedly, of a hypoparathyroidal nature. In case four, the teeth were like those in the first case, the patient had clinical disorders of an irritative nature (similar to those in hypoparathyroidism), and many familiar endocrinopathies; it was probably hypoparathyroidism. The diagnosis in the sixth case was made after a long study and especially based on therapy. The eighth case showed some positive signs of hypoparathyroidal origin.

Conclusions

In view of the foregoing facts we may state the following conclusions:

Incidental: The striking coincidence of troubles of the teeth, early canities, psychoses and hypoparathyroidism, forces us to relate each to the others in a syndrome of a hypoparathyroid or hypothalamic nature. In any case heredity should be an important factor. This is worthy of further studies.

The main conclusion in this work is that dental troubles of parathyroid origin do not exclusively affect teeth during their development. Fully developed teeth can also be affected at any time of life and then become very sensitive and show decalcification and eroded free borders (abrasion). The teeth so affected may be regarded as a sign of hypoparathyroidism.

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BONE ABSORPTIVE CHANGES IN LEPROSY*

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Several theories have been advanced by investigators to explain the cause of bone absorptive changes in leprosy. Faget et al (1) state that such changes are not due to the direct action of the Hansen's *Mycobacillus leprae* but are secondary to neurotrophic lesions. Cooney (2) attributes the bone absorption to the combined action of disturbance of circulation, anesthesia and pressure.

One factor overlooked in these studies is the localized tissue acidosis in and about the affected bones that exists in certain types of leprosy. It is known that lime salts readily go into solution in any acid medium. In an acidemic state, of more or less long-standing, such a condition causes translocation and/or eventual loss of the lime salts through the kidneys and bowels (3,4). The bone absorptive change in leprosy is mainly one of decalcification. In animal experimentation, by maintaining the pH of the blood toward the acid side, increased lime salts could be caused to be excreted from the body. In human studies, more or less pathologically-deposited lime salts could be dissolved, e.g., arteriosclerosis, with similar excretion (3,4,5). The organic acids as carbonic, phosphoric, hydrochloric, etc., normally serve to maintain lime salts in solution, for later proper use and deposition in the body. It is understandable then that an acidemia, either acquired through some systemic disturbance, or induced by therapy such as phosphoric acid, ammonium chloride, long-continued diets of an acid nature or low caloric value, etc., will more or less prevent lime deposition and cause bone absorptive changes with calcium loss from the system.

If the disturbed acid-base equilibrium exists prior to a lepra infection, or is an aftermath, I cannot say. More likely, a lowered pH of the tissues precedes the infection and becomes a predisposing factor in the acquisition of the disease. In both leprosy, and tuberculosis, the alkali reserve shows the actual acid-base reactions to be diminished.

Leprosy, as a rule, develops in those subsisting upon suboptimal and starvation diets, or upon foods high in acid ash. Such a diet will, eventually, lead to an advanced acidemia, hypotension, hypovitaminoses, mineral deficiencies, etc. This would explain in part the susceptibility of the young, especially

those showing subclinical manifestations of rickets and hypocalcemia, to leprosy in those areas where such infection is endemic. Relapses in leprosy have been observed when the caloric intake has been permitted to fall, and/or upon return to diets of acid-ash nature as rice, wheat, tapioca, poi, taroroot, etc. Leprosy is quite analogous to tuberculosis where an acidotic state predisposes to the disease. The tubercle bacillus requires a medium under pH 7.4 for optimal growth, and is not destroyed completely even in fifteen percent sulfuric acid that is known to be lethal to all other bacteria. Tuberculin is highly acid, this toxin-complex appearing to be composed in part of histamine, dioxyphenylamine, and phthioic acid, which apparently are formed as the result of the interaction of the enzymes of the tubercle bacilli with components or organic body material susceptible to their influences. Injections of histamine, like that of tuberculin, give rise to an eosinophilia; and intradermal injections also produce similar erythematous urticarial reactions.

One would expect that such pathogenic organisms as the lepra and tubercle bacilli that require media of lowered pH for optimum growth to be adversely affected by a pH swing toward the alkaline side; those requiring alkali media being similarly affected by acid media. For example, the pneumococcus requires an alkalotic state for optimum growth, its growth ceasing entirely when the media becomes acid. However, one tends to be cautious about applying to all bacteria any conclusions based upon observations of only a few. In tuberculosis, and leprosy, some form of alkalotherapy is indicated in addition to the other measures. All the dietetic and therapeutic measures found of benefit also restore the acid-base balance, often producing an alkalosis. Such a state induces calcium and lipid deposition to aid in fibrosis and the walling-off of foci of infection (3,4,5). Other therapeutic agents that have proven of some benefit in these two infections are extracts of the parathyroid gland, thymol, and vitamin A; the former aiding in calcium and lipid deposition, and the latter two increasing the serum lipid and blood cholesterol values. Fluorine compounds, like the vitamin D catalyst, might also find a place in the therapeutic armamentarium as they aid in causing calcium deposition. No statistics are available showing the absence or low percentage of tuberculosis in those areas where

*The opinions and assertions contained herein are the private ones of the author and do not necessarily reflect the views of the Veterans Administration.

fluorine in the drinking water is a health hazard, e.g. the Panhandle district of Texas.

Summary

1. Some of the data herein must be assumed to provide evidence in favor of the hypothesis that the bone absorptive changes in leprosy is the result of local tissue acidosis. Through the changed acid-base equilibrium, induced by the metabolic activities of the Hansen bacilli, decalcification then occurs, the lime salts going into solution, and being translocated, to be lost from the body via the kidneys and intestines.

2. The disturbed acid base balance, i.e., the lowered pH of the blood and tissues in leprosy, and tuberculosis, precedes the onset of the diseases, being a predisposing factor. The active processes contribute further to the acidotic state, the alkali reserve showing the actual acid-base reactions to be diminished. An acidemia, as from suboptimal and

long-continued acid-ash diets, starvation, disease, etc., would be expected to render such individuals with same to the susceptibility of those infectious agents requiring acid media for optimum growth.

3. In both leprosy and tuberculosis some form of alkalotherapy is indicated along with the other therapeutic measures to aid restoration of the acid-base equilibrium thereby facilitating calcium and lipid deposition, fibrosis and the walling-off of the foci of infections.

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THE COMMON ATOMIZER AS AN EFFICIENT AGENT FOR PENICILLIN Inhalation, In Bacterial Complications of Nasal and Bronchial Allergy

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The treatment of allergic rhinitis and bronchial asthma complicated by bacterial infection has been a thorn in the side of allergists for many years, during which various forms of therapy were in vogue. The eras of climatotherapy, submucous resection, ionization, light therapy, vaccine therapy, psychotherapy, endocrine therapy, vitamin therapy, transfusions of irradiated blood and other types of non-specific therapy have flourished and still have their adherents. However, the era of antibiotics and chemotherapy is certain to be the most scientific and gratifying to date. The management of the allergic patient is a difficult and painstaking task but when this is further complicated by secondary bacterial invasion or due primarily to bacteria, the task is increased threefold and often appears futile. The use of the sulfonamides was and still is an exceedingly valuable aid in the management of these bacterial invasions. But they do not lend themselves to be very efficacious agents for local nasal or bronchial application as required because of their irritant and toxic manifestations.

Penicillin is no doubt the agent of choice for the bacterial invaders susceptible to it because of its nontoxic properties (although allergic manifestations to it are not rare). Its action is well known and the results obtained can often be foretold with accuracy. However, the application of its use for maximum and unerring effect has been the parenteral method. Although many techniques have been devised whereby the injections can be reduced in number by the use of beeswax and oil and other emulsifying agents the certainty as to the exact prolongation of action is in doubt and none can be claimed to exceed ten to twelve hours. In addition, the method is a very expensive one and not within

the reach of many when treatment is to be prolonged.

The oral use of penicillin is dependent on the ability of the stomach to absorb the drug and the ability of the buffers used to avoid its destruction in the stomach. This method is also variable in results and very expensive according to the present market prices for oral penicillin.

Therefore, the scheme of inhalation therapy was devised and the local effect of penicillin was discovered to be most gratifying in doses far less than that required parenterally and still less than that required orally. The oral and nasal cavities lend themselves for this type of therapy and with proper instruction and practice the inhalation may be advanced to the pharynx, larynx and bronchial tree. A special device was marketed for the use of this aerosol spray dependent on oxygen under pressure for its ultimate effect.

This device is satisfactory for office, hospital and home use but it is too costly and too cumbersome to carry about so that the individual can have use of it every two to four hours unless he is practically confined. With this in mind, an attempt was made to use penicillin as a spray with an ordinary atomizer. This was used in fifteen cases and the results have been most encouraging. An ordinary nose and throat atomizer and sodium penicillin solution, 100,000 units in 50 cc. of distilled water are the only requirements. 1 cc. of this solution (pH6) is used in the atomizer and the patient is instructed to use it as one dose every three hours. This can be carried by the patient to his employment, etc., and is most economical and effective. The stock solution is kept refrigerated and 2 or 3 cc. is put into the atomizer, making the treatment available in any circumstance, because of its portability.

The patient is instructed to spray the solution every three hours. Several inhalations are given to each nostril and then the nozzle of the atomizer is inserted between the teeth and deep inhalations are taken as the penicillin solution is forced through the apparatus. In this manner, the spray reaches the trachea and bronchi.

The results of this method have been striking. Nasal obstruction due to mucous membrane congestion is relieved almost immediately. After one or two days of use every three hours, except during sleep, colored mucopurulent thick nasal discharge disappears and if any discharge remains, it is thin, serous and colorless. Congestive symptoms are gone and then the use of the spray can be reduced to every six to eight hours. Several cases, after having been relieved, have been able to avoid spraying for several days. However, in chronically infected tissues the spray should be used at least twice daily after symptoms are controlled.

Inhalation through the mouth has also been effective for bronchial secretions, changing the character from a thick mucopurulent discharge to a thin, colorless secretion or inhibiting the discharge entirely. Asthmatic seizures are not controlled unless they are due to bacterial infection but in those cases the seizures are reduced in severity and frequency. Desensitization is carried on as formerly and acute exacerbations due to bacterial infection are readily controlled by the use of the penicillin atomizer.

It is understood that allergic rhinitis and bronchial asthma are not cured or even helped by penicillin unless the sole etiologic factor is a bacterial organism of known susceptibility to penicillin. But it is a potent weapon in the aforementioned type of allergy and in the allergic manifestations that are complicated by bacterial infection. The usual allergic studies must be completed and evaluated and allergic treatment instituted. The addition of penicillin spray is our most effective and economic agent in the battle against bacterial complication, but it is only an important weapon for bacterial control and does not completely solve the allergy problem.

Case Histories

A few case reports are hereby outlined to illustrate the uses of the penicillin atomizer and its results:

CASE I.—F.E., aged twenty-five, white, male, had been a severe asthmatic for eight years following a nasal operation due to nasal obstruction. About one year after the onset of asthma he had a punctured left lung as the result of an accident. Sent to a sanitarium he remained there for six months. X rays taken several years later still revealed partial pneumothorax. In June 1944 minimal lesions developed in both apices and small pneumothorax of the right lung was visualized which cleared in two months. In July 1945, the apical lesions were more diffuse and suggested low grade activity.

During this period he suffered from frequent asthmatic attacks. However, by removing the positive allergic factors and giving injections of dust

extract and catarrhal vaccine he showed much improvement. His nasal symptoms recurred and he submitted to another operation on his sinuses and one month later asthmatic attacks recurred. A continuous mucopurulent postnasal discharge was always present and x ray revealed cloudy pansinusitis. Another nasal operation was performed in December 1942 and some local improvement was noted for a short time. His asthma likewise benefited. However attacks soon recurred in early 1944 and were very frequent. His nasal discharge and obstruction caused him to return to the hospital for treatment. Antral punctures and washings were repeated weekly with very little added comfort. The washings were mucopurulent constantly.

Tyrothricin was instituted as a local nasal wash and some benefit was obtained while in use. At the hospital in early 1945 argyrol tampons aggravated his condition. Attacks of asthma seemed to occur with each cold which were increasing in frequency. Injections of penicillin alleviated the nasal discharge temporarily. In December 1945 he developed pneumonia from which he recovered rapidly. Then nasal symptoms and attacks of asthma recurred—the nasal discharge was again a thick yellow mucopurulent material. On December 30, 1945 he was instructed in the use of the atomizer containing 2,000 units of penicillin in each c.c. After constant use his nasal symptoms were improved and there was very little discharge, the character of which changed to a colorless thin secretion. His cough was greatly alleviated and his asthmatic symptoms improved and were more easily controlled by dust and vaccine injections and an occasional injection of aminophyllin. An x ray of the chest January 18, 1946 after institution of the atomizer showed distinct improvement in the appearance of the shadows in the left apex and in the lung markings throughout.

This case illustrated the benefits derived from the use of penicillin in an atomizer in the control of the bacterial complication of an allergic rhinitis and bronchial asthma.

CASE II.—B.B., aged 45, white, male, suffered from frequent nasal obstruction, rhinitis, sneezing and coughing for the past four winters. Allergic testing was of little importance except positive reactions to dust and vaccine. These were given and some relief was obtained. Nasal treatment and various nose drops prescribed by rhinologists were of no avail. One year ago he spent several weeks in Florida where his symptoms disappeared but soon recurred after the sojourn. This winter he was again annoyed and returned for injections. Moderate relief was obtained but when the penicillin atomizer was instituted the nasal discharge became scant and thin, the obstruction greatly alleviated and the patient became asymptomatic.

CASE III.—Mrs. D., aged 28, white, female nurse, developed a severe nasal obstruction with a purulent discharge. Nasal treatments and drops brought no relief. The condition continued for over four weeks. On the institution of the atomizer her symptoms were alleviated immediately and the condition was cleared in five days.

CASE IV.—S.F., a young white female, suffered from numerous attacks of asthma, which often required prolonged periods of hospitalization. The attacks were partially alleviated by injections of dust, vaccine, and spring pollen extracts. However, continuous postnasal discharge and nasal congestion due to infection often induced coughing and subsequent asthma. Nasal treatments aggravated her condition and nose drops of every variety were tried without relief. The institution of the atomizer with penicillin has given her great comfort in relieving her nasal congestion, postnasal discharge, cough and asthmatic paroxysms.

Two patients could not continue the use of the method, stating that they became nauseated when penicillin solution was sprayed in their mouth.

All patients have remarked as to the efficacy of the atomized penicillin in relieving nasal obstruction and purulent nasal discharge. One patient stated, "You can take all the drops and toss them out the window. This atomizer with penicillin has given me greater relief for my nose than anything I have ever used and you can take it from me I have used everything." This statement is no exaggeration.

Comment

Apparently the penicillin solution (pH6) so used not only is bacteriostatic but seems to have vasoconstrictor properties affording almost immediate relief from nasal congestion.

Although the number of cases is small to assume a justifiable conclusion the uniformly good clinical results unobtainable with other methods has encouraged the publication of this paper as a preliminary to further study.

Summary

1. Sodium penicillin containing 2,000 units per c.c. of distilled water used as a spray in an ordinary atomizer every three hours is effective in the treatment of superimposed bacterial infection susceptible to the drug, in nasal and bronchial allergies.

2. Sodium penicillin so used is economical and more easily available. Patients can carry their atomizers with them to work and do not require expensive and unwieldy machinery.

3. The immediate relief of nasal congestion was striking in all whose symptoms were due to primary or secondary bacterial complications.

4. Sodium penicillin spray effectively controls nasal and bronchial symptoms due to bacterial infection by reducing congestion, changing the character of the discharge from a thick mucopurulent to a thin serous discharge, reducing the amount of discharge reduction of cough, dyspnea, nasal obstruction and asthmatic paroxysm.

5. The effect of the spray after several days of constant use seems to prolong the effect of the therapy so that several days can elapse in certain cases without treatment. In the case of acute infections, the treatment can be stopped entirely after several days. In chronic infections frequency of the treatment can be reduced after symptoms subside and intervals between sprayings prolonged up to twelve to twenty-four hours.

6. No toxic or allergic reactions were encountered although allergic reactions may occur as in other methods of penicillin administration.

7. Sodium penicillin spray is not a cure for nasal or bronchial allergy but an adjunct to proper allergic treatment in the control of bacterial infection.

(Continued on page 552)

POETIC JUSTICE AND ITS UNCONSCIOUS BACKGROUND

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Poetic Justice, with her lifted scale,
Where in nice balance truth with gold she weighs,
And solid pudding against empty praise.

ALEXANDER POPE, *The Dunciad*, 1.52

I. Descriptive Signs

One of the most consoling fantasies of humanity centers around the expectation that "poetic justice" does exist and comes true eventually. Slight doubt remains, though, whether or not retribution for experienced wrongs shall arrive on schedule. This is visible even in the formulation (*poetic justice*) which contains a suspicious connotation to the effect that that type of justice is more often encountered in poetry than in real life.

What are the descriptive signs of that fantasy of automatic retributory justice? That belief focuses its attention on the future of the malefactor, assuming that exactly the same evil will befall him which he meted out to the innocent victim. The proponents of poetic justice are not satisfied with punishment *per se* of the malefactor; the punishment

must be exactly the same as the original offense. A complete reversal is asked for; technique and means remaining—absurd as it may sound—exclusively the malefactor's choice. By setting the evil example, the malefactor automatically determines the technique of his own undoing—in the fantasy of "perfect" poetic justice.

Poetic justice is further characterized by omitting the time element. Otherwise the victim would depreciate any pleasure in his retributory fantasy: even the ardent believer in poetic justice knows that years and decades may pass till the great moment of revenge comes. The omission of the time element guarantees that unconsumed hatred of the powerless variety can be endured.

A third sign of poetic justice is the assumption that the wrong-doer himself will be the manufacturer of his downfall. Somewhere he will slip, make a mistake. Without knowing it, the victim places great emphasis on that point specifically.

To round up the fantasy of poetic justice, the victim depicts himself in his daydreams as executive

organ of unavoidable vengeance. The malefactor has to slip and through his mistake—of course, unintentionally—come under complete dominance of the one-time victim. As years go by, more impersonal factors are introduced as executors in the fantasy: other victims, fate, death.

The "perfect" fantasy of poetic justice comprises therefore four elements:

1. Punishment of the malefactor must contain a photographic copy of the original crime in reverse.
2. Time element is stretched indefinitely.
3. The malefactor himself must be unwillingly the manufacturer of his own downfall.
4. The original victim is the executive organ of punishment.

II. Unconscious Background

Vengeance is one of the manifestations of aggressiveness and does not require any further explanation:

Now hatred is by far the longest pleasure;
Men love in haste, but they detest at leisure.

BYRON

The fantasy of poetic justice works with that clearly understandable psychic material which, when mobilized in self-defense, is not accompanied by inner guilt. In neurotic cases, the aggressive element in the fantasy of poetic justice is more complicated: the inner conscience of the victim accuses him of psychic masochism. To combat and counteract exactly that reproach, aggression is mobilized.¹

Not less obvious is the superficial motive for maintenance of the fantasy of poetic justice. It represents consolation of the helpless victim. The psychological problem starts only where the four contributaries mentioned above are concerned.

1. Why does the fantasy insist on a photographic copy of the original crime in reverse as punishment? The conception "an eye for an eye, a tooth for a tooth", is old. "*Poena talionis*", punishment executed by the same means with which the original crime was performed, is an ancient precept, deeply anchored in the unconscious. It was only consistent that the Venetian Law of the Middle Ages prescribed that the murderer's right arm had to be cut off before capital punishment was performed. The idea behind it was that the murderer killed with the right arm, therefore he had to be punished in exactly the same organ. It is interesting that so many people felt deep satisfaction that Hitler's alleged suicide was executed through a shot through the mouth: his crimes had started with inflammatory propagandistic words uttered by mouth, therefore the unconsciously self-provoked punishment was executed in the same organ. "Even if the story is not true and just Nazi propaganda", stated a patient of mine, "the fact that they thought exactly of the mouth, which is not a very heroic organ, is consoling."

¹For differentiation between normal and pseudo-aggression, see the writer's paper "Differential Diagnosis between Normal and Neurotic Aggression." *Quart. Review of Psych. and Neurol.*, 1:1, 1946.

²"Psychology of Time-Perception," *Psychoanalytic Quarterly* (in print).

It is likely that the problem embedded in "*poena talionis*" is not fully understandable without adducing Freud's conception of the "unconscious repetition compulsion." That mechanism stresses two sets of facts: the repetitions are beyond the pleasure principle and contain the tendency of *active* repetition of *passively* endured experiences. The purpose of the active reversal of what was passively experienced, is to restore the lesion of the victim's mortified narcissism. Freud gave the example of a little girl forced at the dentist's to open her mouth, who, after returning home, repeated the procedure in a game with a younger sister. At first glance it looks like a simple repetition; in reality there is more to it. At the dentist's, the girl was forced *passively* to open her mouth, in the game at playing the dentist she is *active*, assuming the dentist's part. This reversal nullifies the lesion in the child's self-esteem.

From this viewpoint it is understandable why the malefactor who seduced the victim's wife, is expected to become a cuckold himself. And the man who pushed a victim into bankruptcy must—to fulfill the victim's expectations—bankrupt himself. A deadly car accident would not satisfy the victim.

2. The time element is amazingly elastic in the fantasy of poetic justice; no definite time-limit is set for the expected revenge. There are two reasons for that self-restraint; one is conscious, the other unconscious. The conscious part is obvious: without the proviso of indefinite time-limit the fantasy cannot be maintained in the first place, since the victim must witness the malefactor's triumph. The unconscious reason is less obvious. It has something to do with unconscious time-perception in general. In a longer essay², the writer in collaboration with Dr. Roheim, tried to prove that in every endeavor based on childlike megalomania, normal time perception is automatically disturbed. This applies to fantasy, games, intercourse, etc. Since the fantasy of poetic justice is primarily a fantasy, fortunately one which sometimes, though seldom enough, becomes reality, the time-element can be indefinitely extended without losing its dynamic power.

3. The most puzzling element in the fantasy of poetic justice is the expectation that the malefactor himself will be the manufacturer of his own downfall. Analytically, the problem is not so mysterious. It expresses just the hope that the malefactor's guilty conscience will doom him. The malefactor makes, at first glance, the impression of a person without a conscience. This impression specifically is intolerable to the victim, because he himself is under pressure of his inner guilt. It is known that every defeat increases the power of conscience which accuses the victim. Defeat and unhappiness, said Freud ironically, heighten the moral sense. The victim's own feeling of guilt is *projected* upon the victor—thence the assumption that the latter will perish because of inner guilt. This process of projection explains also why people who in "quiet

times" never take conscience into consideration, in situations of defeat are at once so "absolutely sure" that the victor will suffer from pangs of conscience.

Objectively, the subjective expectation of guilt in the victor—though starting as projection—is not so naive. Every human being has an inner conscience. The difference between normal and criminal conscience is this: the normal conscience prevents "impossible" actions from the start. The criminal conscience permits criminal actions on the unconscious condition that punishment will be meted out later. Every criminal bargains inwardly for the electric chair; without this inner stipulation no criminal action is possible.³ It is an interesting problem for the future to determine whether the so amazing military and political mistakes of the Hitler-Mussolini-Hirohito gangs were thus explainable.

4. The last constituent of the fantasy is that the

³See the writer's "Suppositions about the Mechanism of Criminosity", *Jour. Crim. Psychopath.* 5:12, 1944.

victim is the executive organ of punishment. Little is to be explained there, with the exception of a shift of the executive organ, as time passes by, to fate or death. I knew a man of seventy-eight whose wife, half a century before, had been "seduced" by the old man's partner. In a cruel and tactless way his acquaintances asked him regularly how his former partner was getting along. "I am now only through the newspapers in contact with him. Every morning I am looking up the death-notices . . .", was the old man's answer.

The ubiquitous fantasy of poetic justice is so interesting because it can be used as an example that unconscious mechanisms are involved in every "simple" human reaction. There is no such thing as a "simple human reaction." It just means that rationalizations in a specific case are so well furnished that the unconscious substructure is overlooked.

251 CENTRAL PARK WEST

THE BACTERIUM'S POINT OF VIEW

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A modern and popular belief is that human dignity has been rudely shaken by the discoveries of science. The examples notoriously cited are Copernicus' discovery that the earth was not the pivotal point in the universe, Darwin's revelation that man was just another animal, and Freud's indication that man did not control his own individual destiny. If these discoveries have disturbed man's dignity, this dignity was based on the mendacious feeling of omnipotence, rather than a more true reality picture. It would be ineffably better if human dignity had other than such purely imaginary props to lean upon; possibly ethical or behavioral rather than positional and static.

If one speaks of a bacterium's point of view, one not only anthropomorphizes but one alters somewhat the value and meaning of a point of view. The approach is apt to call forth a querulous response. A point of view is a vantage point for action in most instances. It hardly can be denied that bacteria are active; bacterial diseases imply action, be it chemical or other action of the bacteria. Bacteria do not behave madly or grow anywhere. They may rest patiently until the culture media they require is present. Certainly any bacteriologist is very sensitive about his various cultures of bacteria and sees that they are well housed as well as kept at proper temperature, acidity, nutritional value, etc. Turn off his incubators, overacidify or add too much sugar to his solutions and the bacteriologist very likely will fly into a rage, as if some vandal had torn a canvas by DeVinci, or some prowler had broken a safe and had escaped with a rare jewel. Bacteria are delicate beings and require delicate care. Like humans, they have their Achilles heels, their strengths and weaknesses, and their friends.

When a war is fought between two nations, there usually is mutual accusation as to who started the war. The judgments of history at times reverse the judgments of any one age. An even later age may reverse the judgment again. The history and culture of any one period usually determine the coloring of its judgments of past periods. It may be that the deeper causes of war lie beyond man himself and that human judgments are limited ones in the realm of time. However, human beings do get excited and enthusiastic about purely their own judgments. If one extends the concept a little, one hears talk and reads writing about warfare between man and bacteria or man and insects for that matter. Bacteria are not articulate in the ordinary sense of the word and do not defend themselves by written history. To them, actions speak louder than words.

Now whereas nations recognize that they themselves are at times at peace and at other times at war, they usually depict a supposed enemy of any sort to be constantly preparing or, even more, ready to spring to war against them, as if any organism could carry on so relentlessly. This attitude, taken by nation against nation, is taken willy-nilly by man against the bacteria. In one way this is flattering to the bacterium which is given credit for a superior combative preparedness and propulsion. Yet the bacterium is held so lowly by man; there would be something to learn at this point, from the bacterium, if the original premise were true. Bacteria are labelled by men, as men label each other, as if men recognize some similarity in all living organisms: they are malignant, dangerous, and pathogenic, or benign, harmless, helpful, and symbiotic; at times they are considered the allies of man against other

bacteria. One may read today, of men possibly conniving with bacteria against other men, rather than with men against bacteria. This bonhomie with a bacterial minority group (not in numbers of course) suggests that man truly does not hold the bacterium so lowly. All of this sounds a little like fantasy and madness. Well, maybe it is, and maybe this increment of fantasy and madness may become part of the cultural formation of men at which time it would be considered the norm.

One might venture to suggest that man is superior to the bacterium by virtue of the fact that he is so much larger than the bacterium. This would lead to the impasse that the dinosaurs therefore were superior to men by virtue of their large size. But the dinosaurs are extinct and hence persistence of the form of man would make him superior to the dinosaur. This leads to a second impasse when one finds no evidence that bacteria or even insects show any tendency to an earlier extinction than man and some scientists even envision a future age of insects or bacteria.

Then there is the theory of complexity. One might argue that humans are superior by virtue of their complexity. Yet humans look, as a rule, for simple solutions to their problems and have some aversion to this supposed virtue of complexity. About things one does not know there is an inclination to attribute the quality of sympathy to which is added the flavor of the uncanny. Ghosts are supposed to perform amazing feats but one does not suppose that they have any very complex nervous structure; as a matter of fact it is difficult to comprehend that they have any structure at all. The generally accepted dictum in most intellectual circles is that they are figments of the human imagination. Because bacteria are so small, it is decided that they are less complex, as if there is any evidence that complexity and size have any direct bearing on each other. A species of animals or stars may seem small and lacking in complexity until man finds out more about it. When molecules were conceived of as the ultimate, the solution seemed near. The atomic theory finally, it was thought, ended the problem, but now the list of atoms has grown very numerous. When atoms were split a new complex world was opened up with the field of electrons. However, these latter and their descendants as well may be split until ever smaller substances are found in spite of the glib assumption that the ultimate is discovered in bare energy. Where the end is, no one can say.

The probable smallnesses of matter may never be revealed to man, but he has a finical tendency to insist that where his knowledge, and especially his immediate knowledge, ends, that at that point all knowledge ends. This may be a necessary attitude for him to adopt in an uncertain universe where the extent of the universe itself must vary with the bettering of theory and instruments of measurement. From these vistas, the bacterium is an exceedingly complex organism, formally different but not necessarily less complex than a human being.

It is a well known fact that some human beings

get along better with bacteria than others. One example is furnished by the typhoid bacillus. Some individuals may carry this bacillus about in large numbers, in their bodies, let us say in the gallbladder, and there it lives merrily on as does its host. These individuals give the bacillus to others through the contamination of food or water and lo and behold, these other humans develop an almost, and indeed often, fatal disease. How does this come about, apart from smug and pious theories about immunity? And why cannot all human beings develop these superior social amenabilities and immunities in order to live more amicably with the bacteria? In some humans the bacterium is just contented, whereas in others it pines away and dies, while in still others, it feels that the chip has been knocked from its shoulder and it becomes restive, revengeful, highly reproductive and dangerous. Bacteria seem to act towards men even as nations act towards nations and men towards men. Naturally we say that it is the bacterium that always starts hostilities or at least acts with less majesty.

A nation may be defeated in war. It has not resorted to open use of bacterial warfare. However, in states of deprivation, it may pick up a consorting acquaintanceship with bacteria of one variety or another. An epidemic then may spread throughout the world and the warfare is subtly continued. Depleting food demands are made to stop the spread of the epidemic, and so wars, more often than is believed, end in Pyrrhic victories.

It is believed that influenza and various epidemics and manias follow in the wake of war and may begin in even the nation which is flushed with victory and gorged with food. This is an uncomfortable thought, as if to indicate that to the victor belong the spoils and some of the diseases and disturbances of victory, while to the loser belong the deprivations and the diseases and disturbances of defeat. Man controls the bacteria to an extent but then they escape into smaller forms or at least beckon to their allies, the viruses, to take on the battle. Mayhap, when the viruses are controlled, subtler enemies of man may appear and the victories, here, will be ephemeral. It appears that man is a culture medium for bacteria and that whether or not bacteria or viruses thrive and cause difficulties within man, or remain there peacefully and harmlessly, depends on man's chemistry at any one moment or set period of time; the same may be said with respect to his physiology, and quite obviously, with respect to his emotional state. The blush in a young girl's cheek at a remark, alters the acid, sugar, and other chemical content of her cheek. This may sound unromantic and one may hope that no one starts a campaign to stop blushing. The chemical state, both qualitative and quantitative, of the skin and mucous membranes of a man red with rage is certainly different from that of a man pale with fear. It is not a matter of just more or less blood. These are simple examples from the infinite number of possibilities. Which states of the human medium favor the growth of bacteria or viruses, this bacterium or this virus?

When physicians give drugs they, as a rule, think in terms of warfare. They endow sulfa drugs and penicillin with execrating, animistic qualities once they are injected within the body and the drugs then are said to attack the offending organisms. This is an erroneous overimplication. Perhaps these drugs alter the human being temporarily as a medium, by altering the chemistry and hence the nutritional possibilities for the bacteria, as a result of which they cannot proliferate and must die. In a test tube observation, man's thinking turns to the concept of a purely chemical or mechanical reaction more readily. Then man becomes more objective, more correct and more efficient. Chemistry after all is only a more subtle mechanism.

The purpose of this paper is not to present defeatist ideas or to instill pessimism by raising with out warrant the prestige of bacteria, and much less is it the purpose to lower the true dignity of man. It is designed to show that man's behavior and emotions contribute to disease formation in ways hardly suspected. Man expects that type of attack from an enemy which he himself plans to launch or at least which he is prepared to defend. He is horribly short-sighted and vain in his estimation of an enemy and especially a once-defeated enemy. Vision may remedy material disadvantages, but material advantages cannot possibly compensate for lack of vision. A nation may plan an attack with atomic bombs and may find a more subtle or even a more gross counter attack to be overwhelming. There is much stupid talk about defense and attack. Actually there is no defense against gunpowder, but there is the gunpowder counterattack. No doubt the same principles will be worked out for atomic warfare. A defeated nation may acquire a virus disease, achieve its vaccination and emerge victorious while the ever stronger virus may decimate the rest of the world. A nation might win an atomic victory and then find the defeated nation arise with a new religious concept that might sweep the world in counter-victory.

If there is any truth to all of this and the author believes that there is, for he is not a hoax-drafter, it poses many new problems in disease control hitherto barely indicated in the scientific literature. It might be wise at this point to speculate widely but with a simple example. One of the mysteries of poliomyelitis is that if it strikes one member of a family it usually stops at that point. This defies all the laws of contagion such as exposure, incubation periods, proximity of contact, familial trends to disease, etc. The laws of contagion collapse at this point and would have to be dropped, at least in this disease, or one would have to find other laws. Certainly one cannot rest assured in the abysmal ignorance of failing laws. The profession is hardly aware of the scientific absurdity of such laws in such a case. If one stops the compulsive examination of the virus and studies instead the family, one might find that prior to the appearance of the first case of poliomyelitis, the family was under great tension and strain of some form or other. As a culture medium all the members of the family may have

been similarly prepared or the "being-defeated" ones were in this position. The one who shows the effects of the disease first had remained in the state of tension until the virus had assumed considerable strength. He or she is struck down. With the diagnosis of the disease in the one individual the remainder of the family becomes completely struck with awe and the whole physiology, chemistry, and behavior of the remaining members of the family changes. These changes alter the body chemistry and physiology as culture media for the particular virus and thus in other possibly infected members of the family the disease is arrested or at most produces an unrecognized vaccinating infection.

It is indicated that there are certain domains of disease in human beings that are not as yet explored. This is a platitude unless one indicates that these areas now are ripe for exploration. They must be explored if man's ingenuity in creating new remedies against disease is not permitted to be exhausted before he sees that many more remedies against disease lie within the human organism, and may be used if they are but understood. Hence what may be lost of purely thralling human dignity by examining the bacterium's point of view, is quickly freshened and regained, for those who wish to hold to this dignity, by a reparable discovery of more subtle mechanisms within man himself of which he has been until now unconscious.

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Penicillin Inhalation

(Continued from page 548)

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6610 WOODLAWN AVENUE

Editorials

The Specialist Versus the General Practitioner of Medicine

At the recent meeting of the American Medical Association in San Francisco, July 1-5, Dr. Wingate M. Johnson of Winston-Salem, N. C., who was chairman of the section on practice of medicine, read a thoughtful essay on the question "Will general practice survive?"

The title was challenging, even astonishing, just as astonishing as the title of a book which came off the press a short while past asking *Is Sex Necessary?* Such questions may have selling value, but they are as foolish as any query could be pertaining to the shape of the earth.

No doubt Dr. Johnson wished to arouse his hearers to a lively consideration of the danger of general practice which overshadowing specialism may yet bring, but after having set the title firmly, he exploded any theoretical consideration as to the end of the general practitioner. In fact, he made it quite plain that more is to be feared from the cultists than from any coterie within the ranks of organized medicine. He may have something there. The so-called "irregulars" have been with us always, and their influence seems to be growing. In polite society it is quite usual to hear some lovely lady, who ought to know better, say to an introduced doctor by way of making conversation: "Of course you know Dr. X. the famous chiropractor. Well, he has been fixing my sacroiliac for ten years now, and I just adore him". That is a pill of another kind which is hard to swallow and still remain complacent. One's instinctive desire is to run out of the room as fast as possible, but it might be worthwhile to go into the lady's symptoms somewhat compassionately and find out, if possible, why she is not under the care of a good orthopedist. In Shakespeare's phrase "Here's the rub," for she may explain that she has "been to dozens of orthopedists and they have not helped one bit". What can any of us say to offset such a statement? Perhaps we had better throw it to the orthopedic specialists, meanwhile changing the subject.

One can scarcely agree with the inference of the essayist that the medical schools are turning out specialists only. That is certainly bearing down a little too hard. Instructors in special subjects in medical schools among whom this writer is one, deplore the few hours that can be allowed to students in any of the specialties. At most, we can give them

only a smattering as to methods of examination and procedure, and show them a few patients "of the type you may expect to meet in your practice."

It is hoped that at least enough will be absorbed not to "subject an impetigo patient to a battery of expensive laboratory tests before applying ammoniated mercury ointment". The quotation is from Dr. Johnson's paper. That means, of course, diagnostic recognition of a skin condition which is not cancer, tuberculosis, syphilis, beriberi or any other dangerous evidence of a deep-seated systemic disease.

Casual observation of some specialists in our acquaintance during World War II seems to indicate that they are more willing than in days past to consider lesions in a larger way, to seek for general causes of a local complaint. One, at least, who is a recognized ear, nose and throat man has an extensive suite of rooms equipped with fluoroscope, electrocardiograph and pathological laboratory. He seems not to be satisfied with a readymade diagnosis or history from another source, but must make his own. He does not treat general diseases, but refers the patient back to the family physician with an opinion, and a request that he manage the cardiac, rheumatic or other disabilities. This may be difficult because of certain indignities and damaged pride, but those who are fond of saying that the patient's interest comes first will welcome the proffered aid and put personal feelings aside.

One thing is certain, namely, that no physical examination is of any great value unless it is complete, and the general man must be able and willing to go all the way until he strikes some problem which can best be solved by a specialist. We all need help at times and it is good to know and have the confidence of a fellow worker who is cooperative and not derisive as to one's medical shortcomings.

The record of the old family doctor stands unblemished before the world. He has been and still is honored in books and plays, and receives the hand of fellowship in the human family wherever he goes as a tried, true, respected and loyal friend. In Madison, Conn., Dr. Milo Pember Rindge has served that community for some forty years. On September 10, 1946, he was given a surprise party in the Town Hall in recognition of his fine qualities as family counselor and friend. From miles around came the lame, the halt and the blind as well as those seemingly sound in mind and body to pay tribute. The occasion was a sort of farewell in view of his proposed removal to Nevada where a daughter is practicing medicine.

That sort of event gives credence to Dr. Johnson's

optimistic answer to his own question of survival: "He will survive to treat eighty-five percent of all ailments which send people to doctors' offices." For, if he did not survive there is little chance of medicine as a whole continuing its great services to humanity. No one need be frightened or worried lest specialism usurp entirely the rightful place of the good old general practitioner. Human nature does not change much down the ages, and human nature has taken the family physician to heart long since as an adopted member of the family. He fills a niche that even the cultists cannot fill, and one must recognize that these sometimes succeed in relieving pain and distress of body or mind; for medicine, that is drugs, does not do all the healing. Personality counts for much in any healer, and the family doctor has it to a degree. Oldtimers in every town love to tell stories of heroism or pet peculiarities of doctor so-and-so, and they do it with pride and affection. As long as this is maintained, one need not worry too much about socializing medicine, and paying the hired doctor out of public funds.

Population Problems

Among the many and various problems which are troubling the minds of all thinking persons is that of population, that is, of shifting populations from overcrowded areas to the country or to garden cities or their like. It is obvious that this is indeed difficult to solve in a way that is convenient and agreeable. It is trite to say that the war has upset most preconceived ideas and that those who have returned, soldiers and others, will not settle down to a humdrum peaceable civil life easily. In some instances, and to a certain degree, their dispositions and habits have changed. As a matter of fact, they are not quite the same individuals who sallied forth voluntarily or compulsorily to fight or work for their country. Their outlook on life is different.

The object of this editorial, however, is to discuss population or depopulation problems which await some kind of solution, in Britain especially, which is an overcrowded country. As a matter of fact, depopulation is the great problem confronting the world and in Britain the truth of this statement is evident. Her cities, in which the majority of the inhabitants live or exist, invite and hasten their own ruin by it. The people of today seem largely to have lost confidence in the future and the desire to reproduce their kind. It also appears that if the British and American democracies are to continue to exist they must concern themselves with the quantity as well as the quality of their stock. It has been sug-

gested that a religious revival might stir them to the depths of their souls. Thus far there have been few signs of such a happening. And there are no signs that those who suffer from present day conditions have any strong desire to seek a remedy. For the most part they are lethargic and indifferent and had rather be left alone than make vigorous efforts to emerge and revert to that form of living which used to be considered normal. The truth is probably that the matter is a reaction from the war, with no wish for the mental exertion of solving or trying to solve any problems whether these be of population or depopulation. Time may solve them in one way or another and the aim should be to keep as healthy as possible in body and mind.

Malaria in War and Peace

Malaria has been a pest and a scourge during the centuries and is one of the oldest diseases recorded. Indeed, it has decimated some countries and among its worst characteristics is the persistency with which it, so to speak, takes root in the human body and its debilitating consequences. It goes without saying that in the Middle East and especially in the campaigns of the Far East, malaria was an enemy of the first order. What makes this disease so intolerable is that if money which has been spent in other directions, largely in war, had been expended or even expended partially in preventing disease and furthering health, so much might have been done in the prevention of this, perhaps, the most widely spread disease on earth. Malaria is a malady which can be prevented and the best means for prevention are known.

The Campbell Memorial Oration was delivered before the Lister Medical Society in the Whitla Medical Institute, Belfast, recently by Brigadier J. A. Simon, V.C., whose subject was "Malaria in War". Brigadier Simon has had much experience with malaria in the medical service in the Far East. After describing the most effective modes of preventing malaria, chiefly by attacks on the larvae for example, in the widespread use of D.D.T., etc., the speaker proceeded to discuss the susceptibility of the human host and the attack on the disease producing parasites with quinine and mepacrine. Quinine was hard to obtain, especially when the Japs overran Java, so research on mepacrine was conducted vigorously and was brought forward in place of quinine in treatment and had marvelous results. As a suppressor of malaria, its action was extraordinarily effective, that is, when adequate and regular administration was insisted upon by very strict orders. There is no doubt that mepacrine was highly effec-

tive and it may be said that its use was a factor in winning the tedious and trying campaign in the Far East. However, more must be learned of its after effects on the human organism before it can be hailed as the best drug treatment of malaria. As in most diseases prevention is better than cure and the object should be to prevent malaria. The methods of how to do this are known and should be put into force regardless of expense. It is of international concern and should be tackled from this standpoint.

News Items

American Association of Genitourinary Surgeons.—Dr. Clarence R. O'Crowley, Newark, N. J., has recently been elected president of the American Association of Genitourinary Surgeons. Other officers include Dr. Arthur H. Crosbie, Boston, Mass., vice-president, and Dr. Charles C. Higgins, Cleveland, Ohio, secretary-treasurer.

Society for Clinical Ophthalmology.—The newly-elected officers of the New York Society for Clinical Ophthalmology are as follows: President, Benjamin Friedman; vice-president, Daniel Kravitz; recording secretary, Bernard Kronenberg; corresponding secretary, Benjamin Esterman; and treasurer, Leon Ehrlich.

Western Association of Industrial Physicians and Surgeons.—Dr. John D. Ball, Santa Ana, Calif., was recently elected president of the Western Association of Industrial Physicians and Surgeons. Dr. William P. Shepard, San Francisco, Calif., was elected vice-president. Other officers include Dr. James M. McCullough, Crockett, Calif., treasurer, and Dr. Rodney R. Beard, San Francisco, Calif., secretary.

American Society for Research in Psychosomatic Problems.—Dr. Edward Weiss, Philadelphia, Pa., has been elected the new president of the American Society for Research in Psychosomatic Problems. Dr. Adolf Meyer, Baltimore, Md., continues as honorary president. The office of president-elect was left vacant at the last election and will probably remain so until the next annual meeting of the society. Dr. Edwin G. Zabriskie, New York, continues as secretary-treasurer.

N. Y. State Association of School Physicians.—At its business meeting, June 24, the New York State Association of School Physicians elected Dr. Edgar Bieber, Dunkirk, as president for the coming year, succeeding Dr. Clarence A. Greenleaf of Olean. Dr. Lewis Wade Heizer of Watertown was elected vice-president and C. Adele Brown reelected secretary-treasurer. The following were elected members of the executive committee: Dr. William E. Ayling, Syracuse; Dr. John E. Burke, Schenectady; Dr. Clarence A. Greenleaf, Olean (honorary); Dr. Michael Levitan, Rome; and Dr. Melvin T. Woodhead, Amsterdam.

N. Y. State Health Officers Association.—The New York State Health Officers Association at its annual business meeting, elected the following officers for the coming year: President, Dr. George E. Sanders, Rochester; first vice-president, Dr. Burdge P. MacLean, Huntington; second vice-president, Dr. Robert H. Broad, Utica; third vice-president, Dr. Charles D. Shields, Buffalo; secretary, Dr. Eldred Stevens, Hammondsport; treasurer, Dr. H. Burton Doust, Syracuse (reelected).

National Tuberculosis Association.—Dr. William P. Shepard, Berkeley, Calif., was installed as president of the National Tuberculosis Association at the recent annual meeting held in Buffalo, New York. Dr. James R. Reuling, New York, was named president elect. All other officers were elected as follows: Drs. Hugh B. Campbell, Norwich, Conn., and Horton C. Hinshaw, Rochester, Minn., vice presidents, Dr. Herbert R. Edwards, New York, secretary, Collier Platt, New York, treasurer, and President Truman and Dr. Charles J. Hatfield, Philadelphia, honorary vice presidents.

Borden Award.—The Borden Company Foundation, New York, has announced a new award in medical sciences to be administered by the Association of American Medical Colleges. The award, which will consist of \$1,000 in cash and a gold medal, will be made in recognition of outstanding research which has been carried out by a number of the faculty of a medical school which is a member of the Association of American Medical Colleges, and which has been published during the preceding calendar year.

Radioactive Uranium Isotopes.—The possibility of obtaining for the first time relatively large amounts of radioactive isotopes through the uranium piles of the Manhattan District brings basic biological investigation to a new frontier, according to a statement by Major General Norman T. Kirk, surgeon general of the Army, whose office will cooperate in the distribution of the materials to Army hospitals. The surgeon general said that requests for these materials should come from accredited research groups or educational institutions and should be directed to Isotopes Branch, Research Division, Manhattan District, P. O. Box "E", Oak Ridge, Tennessee.

Dramatized Case Histories.—The National Mental Health Foundation is preparing to launch a series of professionally produced radio plays designed specifically to educate the American public to a sound and sympathetic approach towards mental illness and related problems, according to a recent announcement. The first dramatization is scheduled to begin in September and continue monthly thereafter. It is also planned to make these programs available for use at meetings. Organizations and societies wishing further information about this series are requested to write to the Radio Section, The National Mental Health Foundation, Box 7574, Philadelphia 1, Pa.

Graduate Fortnight of New York Academy of Medicine.—The nineteenth graduate fortnight of the New York Academy of Medicine will be held October 7-18, 1946, on the subject of tumors. It will include morning panel discussions, scientific exhibits, and demonstrations at the Academy, afternoon hospital clinics at leading hospitals of New York City, and evening lectures. All Fellows of the Academy will receive, without request, program and card of admission. Complete programs will be mailed to other physicians on request.

Physicians who are not Fellows of the Academy may register by sending name and address, with a check for five dollars, to the secretary of the Graduate Fortnight Committee, 2 East 103 Street, New York 29, New York. Medical officers of the Army, Navy, and United States Public Health Service, on active duty, will be admitted to all sessions without registration fee.

Plan to Study War Wounds and Diseases.—General Paul R. Hawley, Veterans Administration medical director, informed a press conference of plans whereby his department, in conjunction with the Army, Navy and National Research Council, will undertake follow-up studies of veterans disabled by wounds and disease during the war, according to the *J.A.M.A.*, August 10, 1946. General Hawley said that thirteen states are now participating in the home town outpatient treatment for veterans. He revealed that 4,100 doctors are now attached to Veterans Administration hospitals. Around four hundred will be needed in the next four months, with salaries ranging from six thousand to eleven thousand dollars.

State Health Congress of New Jersey.—A group of interested agencies is planning the formation of a state health congress. Dr. Stanley H. Nichols, Asbury Park, N. J., chairman of the public health committee of the Medical Society of New Jersey, was named temporary president of the organization which has been created and Mr. John Hall, executive secretary of the New Jersey Health and Sanitary Association, was elected temporary secretary. The organization will draw up a constitution and by-laws to develop the state health congress. Included among the membership of the state health congress will be representatives of the Medical Society of New Jersey, State Dental Society, New Jersey Pharmaceutical Association, American Legion, State C.I.O., New Jersey Hospital Association, New Jersey Department of Health, State Department of Institutions and Agencies and New Jersey Health and Sanitary Associations with the addition of representatives from the State Grange, State Federation of Labor and the State Chamber of Commerce. The new organization will utilize services of existing agencies and thereby establish principles to assure a better distribution of all health services to the people, adopt recommendations to implement these principles and use whatever machinery is at its disposal to inform the public of its findings and recommendations.

New Quarterly Journal.—The publication of a new journal, the *Quarterly Review of Dermatology and Syphilology*, has been announced by the Washington Institute of Medicine, Washington, D.C., as a notable event marking its fifteenth year in the fields of medical publication and library research. This new publication will survey all published material on dermatology and syphilology appearing anywhere in the world from January 1, 1946, onward, and will be the first review journal in its field ever to provide this complete coverage. The staff includes Dr. Donald M. Pillsbury, editor-in-chief; with Dr. Herman Beerman and Dr. Clarence S. Livingood, associate editors. The editorial board includes more than thirty top-ranking specialists from universities and medical centers throughout the world, and additional acceptances to invitations for membership on the board, principally from other countries, are expected according to the Institute.

Personal.—Dr. Willard C. Rappleye, dean of the College of Physicians and Surgeons, Columbia University, was reelected as chairman of the board of directors of the Health Insurance Plan of Greater New York at its annual meeting held recently at the Health Insurance Plan headquarters, 425 Avenue of the Americas, it was announced by Dr. John J. Wittmer, executive vice-president.

Dr. Robert Boggs, assistant professor of anatomy at New York University College of Medicine, has been named an assistant dean of the college, Dr. Harry Woodburn Chase, the university chancellor announced.

Colonel John M. Caldwell, MC, has been appointed chief of neuropsychiatry consultants division following Brigadier General William C. Menninger's separation from the Army on June 27.

Colonel Eugene W. Billick, MC, for 32 months chief surgeon of Africa-Middle East Theater with headquarters in Cairo, was recently appointed deputy chief of operations in the Office of The Surgeon General. He succeeded Colonel Bryan C. T. Fenton, who is now assigned to Brooke Army Medical Center, Fort Sam Houston, Texas.

Dr. James E. McCormack, assistant to the dean of New York University College of Medicine since 1944, has been appointed assistant dean of the college, Dr. Harry Woodburn Chase, the university chancellor recently announced.

Dr. William B. Wartman, who served as a lieutenant colonel in the U. S. Army Medical Corps during the war, has been appointed Morrison Professor of Pathology and chairman of that department in the medical school of Northwestern University, President Franklyn B. Snyder has announced.

Dr. George L. Wolcott has returned to his position as medical director of the Charles H. Phillips Co. Division of Sterling Drug Inc., after serving with the Army Medical Corps for three and a half years.

Dr. William N. Parkinson, dean of the School of Medicine, Temple University, Philadelphia, has received the Alumni Distinguished Service Award for 1946.

Letter from Britain

(From Our Own Correspondent)

British National Physical Laboratory

This institution has gone back to its custom before the war of welcoming guests to wander at will through its various departments, under the guidance of a member of the staff, to learn something of what was being done, of the investigations in progress and in prospect. In June, the laboratory was thrown open to inspection for three days. The delegates of the Empire Scientific Conference, being held in London organized by the Royal Society, were entertained on the first day, the universities' staffs on the second day and representatives of service and industrial organizations on the third day.

Year's Work at Lister Institute of Preventive Medicine

As usual, this institute has been doing good and useful work in the direction of preventing disease, which after all is of the first importance. An interesting part of the report is that which deals with the nutritive value of various food proteins. It is stated that the degree of flour extraction has been raised from seven percent to one hundred percent; that the proportion of the ingested nitrogen which becomes incorporated finally in the tissues of growing animals has increased from twenty-three to twenty-seven percent. With the ministerial decree that bread will be rationed, this sounds somewhat encouraging. Attention has been paid also to the nutritive value of protein hydrolysates of milk. And as milk and bread are nowadays the main foods of the young, this is likewise encouraging. Further biological estimations of vitamins have been reviewed. It is satisfactory to record that the chairman of the institute stated that it is moving with the times and is well embarked on a new and expanding service to science and the community.

Policy of Old Age in the Report of Nuffield Foundation

The first annual report of this foundation has been issued. The foundation is in the hands of trustees. Their policy in regard to the aged seems to be based on practical lines and engenders optimism. In Britain the aged poor is indeed a problem. A committee has been formed to survey the situation and a report is due soon. Grants have been made to Cambridge University for a study of the causes and results of ageing and for an inquiry to decide how the middle aged and elderly learn and what they are capable of learning. Of course, it is obvious that the problem of old age in Britain is both difficult to solve and serious, more serious than in any civilized country. In this connection an annotation in the *West London Medical Journal*, April 1946, is worthy of notice. It is based on an article in the *Lancet*, Feb. 2nd, contributed by four district medical officers for the city of Glasgow engaged in out door medical service. It was pointed out that in 1921 the number of people in Britain over the age of sixty-five was roughly five and three quarter million; in 1931, seven and a half million; in 1936, eight and three quarter million; while the

total population of these years was 42,769,196 in 1921, 44,790,885 in 1931, and (estimated) 48,895,000 in 1936. The total number of old persons investigated in Glasgow was 1,001, comprising 278 males over sixty-five years of age and 728 females over sixty years of age. Each individual was visited in his or her home so that accurate information should be obtained as to domestic conditions. The feature emphasized in the *Lancet* article and commented on in the *West London Medical Journal* is that the war has proved that many old people thrown previously on the scrap heap are quite capable of doing certain kinds of productive work, some are anxious to do so and it may be added work will benefit them mentally and physically. The data given and the experience of the authors of the *Lancet* article lead them to the conclusion that the old and elderly in Britain should have more attention and that schemes and plans to suit each individual should be, not only mapped out, but carried out so that the aged and elderly may end their closing days in comparative comfort. Lord Nuffield may be termed the Rockefeller of England. He has made a great deal of money in industry and is spending or placing big sums in the hands of trustees to be expended in instituting and forwarding charitable schemes of many kinds including that of education. Lord Nuffield is a modern practical philanthropist who moves with the times.

Medical Libraries in Europe

Libraries are a necessity in civilized countries and medical libraries especially fall under a similar category. Some medical libraries were damaged during the last war and while Britain escaped with no great loss, in Europe there was a considerable amount of destruction done both to books and buildings. The buildings can be replaced, but some of the books are irreplaceable. This is a work in which the Royal Society of Medicine is engaged in liberated European countries greatly aided by the generous grant of more than \$300,000 by the Rockefeller Foundation. Mr. J. B. Hunter, treasurer of the Royal Society of Medicine, stated that the expenditure of the society on its own library will soon be higher. Sir Maurice Cassidy, consulting physician to St. Thomas's Hospital, has been elected president of the society for 1946-47. Dr. Charles Harris has retired from the post of honorary secretary after five years' service and the new honorary secretaries are Mr. R.H.O.B. Robinson and Mr. W. Pool.

Etiology and Control of Infections and Transmissible Diseases

At the recent Royal Society Empire Conference held at Cambridge, Dr. J. DuToit laid stress on the close relationship between medical and veterinary science. He brought forward several instances of counterparts between animal and human disease. An outstanding example was that of sleeping sickness which is identified in men and animals. He pointed out what seemed to be not generally known that

contrary to accepted ideas, this malady can be transmitted by several species of the tsetse fly. At a meeting of the same conference on July 3rd, Sir E. M. Mellanby said that in agriculture the farmer was in control and in medicine the scientist; therefore, coordination between them was required. It was possible to carry on independently, but this was not the true goal and the problem of nutrition and malnutrition should be tackled at once by a combination of the medical and agricultural scientists.

Diploma in Industrial Health

A short time ago, a diploma in industrial health was instituted by the Society of Apothecaries, London. The Conjoint Board of Royal Colleges of Physicians and Surgeons have now followed suit and have issued regulations for a similar diploma. The courses have been laid down; the scheme resembling in some particulars the curriculum and examinations for the diploma of public health. Exemption from the first part of the examination is granted to holders of such certificates.

Hospital Staffs and Working Conditions

Hospital nurses are needed urgently in Britain. Recently a booklet has been issued by the government, *Staffing the Hospitals an Urgent National Need*. This little book gives details of the agreement reached between the government and hospital organizations. The minister of health, the secretary for Scotland and minister of labor and national service have pointed out that the situation is serious already and is likely to become critical unless recruits can be obtained quickly. Government and hospital authorities have agreed upon salary increases and reforms including permission to live out of the hospitals. In these days of freedom to live as one wishes, if one can afford to do so, hospital nurses refuse to be tied by this or that restriction or by any but light discipline. It seems that their claims must be allowed, perhaps, almost wholly as the existing state of affairs is impossible and intolerable.

Honorary Fellows of the Royal Society of Edinburgh

The following have been elected recently as honorary fellows of the Edinburgh Royal Society: Professor H. G. Backlund, professor emeritus of geology, University of Upsala; Professor J. Hadamard, formerly professor of mathematics, College de France and L'Ecole Polytechnique, Paris; Professor J. Hildebrand, professor of chemistry, University of California, Berkeley; Professor S. A. S. Krogh, professor of animal physiology, Zoo Physiological Laboratory, Copenhagen; Professor E. O. Lawrence, professor of physics, University of California, Berkeley; Professor E. D. Merrill, professor of botany, Harvard University, Cambridge; and E. D. Adrain, professor of geology, Technische Hoogesschool Delft.

The Reith Prize (1943-45) was presented at the meeting of the Royal Society of Edinburgh on July 1st to Dr. W. L. Edge, University of Edinburgh, for his work in geometry, particularly, for his papers published in the proceedings of the society within the period of the award; and the Neil Prize

(1943-45) jointly to J. C. Carr, Institute of Annual Genetics, University of Edinburgh, for his contributions to our knowledge of tumor viruses in animals; and to Dr. Ethel D. Currie, for her paper on growth stages in some Jurassic Ammonites, published in the transactions of the society within that period.

Imperial Cancer Research Fund Report, 1945-46

During the war the work of the British Imperial Cancer Research Fund was carried on without intermission and valuable work was done. Dr. W. E. Gye, director of the scientific work of the Cancer Fund has issued his report (1945-46) which shows that work on malignant diseases, while the cause has not been discovered, that treatment has been vastly improved.

Order of St. John of Jerusalem

Among the list of promotions and appointments of the order of St. John of Jerusalem is the name of Dr. Mary Rutledge of Norwich, England, who has been a strenuous worker for the Order during many years.

New Antimalarial Drug

A new drug said to be seventy-five times as active as quinine against chick malaria was reported to the American Chemical Society by Dr. J. H. Burckhalter of Parke, Davis & Company, Detroit, Mich., at a symposium on antimalarial agents sponsored by the Medicinal Division at the society's 109th national meeting held in Atlantic City, N.J.

The drug, which is expected to be of great value against human malaria, is one of a group known chemically as substituted "alpha-aminocresols", according to Dr. Burckhalter, who described the research he conducted in the Parke, Davis laboratories in cooperation with F. H. Tendick, Eldon M. Jones, W. F. Holcomb and A. L. Rawlins.

During a ten year search for a superior antimalarial agent, more than two thousand different chemical combinations have been submitted for study by these laboratories, Dr. Burckhalter said. The alpha-aminocresol group has shown considerable promise, and more than one hundred of the simpler of these compounds have been tested, he stated.

"Starting with an agent of low effectiveness," Dr. Burckhalter explained, "chemical alterations in the molecule were progressively made until the more active representatives were structurally quite distinct although still within the same chemical classification. Several proved to be from one to four times as active as quinine in avian malaria and were found to be active also when tried clinically against induced human malaria. Greatly increased effectiveness, however, has been demonstrated more recently by a group of more complex alpha-aminocresols. One of these has been found to be seventy-five times as active as quinine against chick malaria. In general, these drugs are relatively nontoxic and do not stain the skin. Clinical trials already indicate that certain members of this latter series may prove to be valuable therapeutic agents in the treatment of malaria."

Book Reviews

Allergy

Familial Nonreaginic Food-Allergy. By ARTHUR F. COCA, M.D., medical director of Lederle Laboratories. Second edition. With 28 tables and 14 charts. Springfield, Ill.: Charles C. Thomas, Publisher, 1945. Pp. 191. Price \$3.75.

The author contends that a large body of published clinical evidence points to an allergic nature of many clinical symptoms and syndromes. Such interpretation has been impressed upon the observer after repeated association of these manifestations with the eating of particular foods taken at relatively long intervals of time and followed occasionally by some form of cutaneous sensitivity. A new diagnostic method has therefore been developed offering highly accurate and practical means of identifying the excitants of food allergy. The orthodox concept of pathological disease developed by Von Pirquet is applicable only to atopic allergy and to serum sickness. In these two categories antibodies have been identified with certainty as the specific cause of the allergic phenomena. In three other categories i.e., contagious dermatitis, infectious allergy and familial nonreaginic food allergy, the hypothetical antibodies postulated by the theory have not been demonstrated. Indeed, the search for them is discouraged by the circumstances that some of the excitants are not antigenic. For example, metals, and alkaloids. Nevertheless, the author follows the assumption of antibody-like substances as the specific mechanism of all allergic disease because of the specificity of allergic reactions. The author maintains that the level and range of the normal pulse rate is a physiological constant varying widely in different individuals. But the most constant cause of variation in an individual is familial nonreaginic food allergy prevalent in about eighty percent of the white population. The monograph is devoted to interpretation of the pulse, diet record, art of interpreting such a record, symptoms of idiopathic allergy and the management of such sensitivity. The approach is not orthodox and invites careful consideration in terms of one's own clinical observations.

Historical Medicine

Classic Descriptions of Disease. With biographical sketches of the authors. By RALPH H. MAJOR, M.D., professor of medicine, University of Kansas. Third edition. Illustrated. Springfield, Ill.: Charles C. Thomas, 1945. Pp. 679. Price \$6.50.

The first edition of this book was published in 1932; the second, in 1939, and the present one in June 1945. It is commendable that author and publisher alike have given such earnest effort to this labor of love so that present-day doctors may appreciate the wisdom of the fathers of medicine. Reference is made to medical historians of the nineteenth century who have passed on, notably, Karl Sudhoff, Fielding Garrison, Arnold Klebs, and Sir Humphry Rolleston. To this galaxy might well be added the name of Sir William Osler who maintained a splendid private library which contained

practically all of the early (and later) works of medical mentors from Hippocrates down.

Dr. Major divides his book into sections. The first cites those ancients who wrote on "the theory of infection", beginning with syphilis, through tuberculosis, plague, malaria, yellow fever, tetanus, diphtheria, typhoid, the exanthemata, rheumatic fever, sleeping sickness and Hodgkin's disease. It is interesting to note that Dr. Benjamin Rush (1745-1813), a signer of the Declaration of Independence, wrote "An Account of the Cure of Several Diseases by the Extraction of Teeth." Section II cites authors who dealt with diseases of metabolism, among them, diabetes, thyroid disturbances, tetany, gout, Paget's disease, osteomalacia, Heberden's nodes, etc. Section III, headed Lead Poisoning, mentions some seven writers who discoursed on that occupational condition. Section IV deals with diseases of the circulatory system in which we find that heart block and stenosis and insufficiency were well known to eighteenth century practitioners. There follow sections on blood diseases, kidney affections, respiratory conditions, and deficiency ailments. In other words the old clinical observers worked with pretty much the same problems in diagnosis and treatment as we of today. In spite of all our "advances," we shall pass on to others many unsolved mysteries and shall be called in our turn "old timers".

Radiology

Mass Miniature Radiography of Civilians. For the Detection of Pulmonary Tuberculosis. By KATHLEEN C. CLARK, P. D'ARCY HART, PETER KERLEY and BRIAN C. THOMPSON. With illustrations. London: His Majesty's Stationery Office, 1945. Pp. 135. Price \$9.00.

These studies were made with a mobile apparatus using a 35 mm. film. Part I is devoted to administration and technique. Here many illustrations are used to show positioning, exposure, measurements, readings of films etc. Part II aims to give the results obtained. Here there seems to be some uncertainty because of various factors, such as non-cooperation of patients, failure to return for additional check-up, desire to keep the diagnosis secret and difficulty of management in the mentally diseased. The work has been well done, however, and leads to a desire to continue the investigation over a period of years. Early diagnosis by x ray may be missed because the pathology has not been as yet thoroughly established in order to cast a definite shadow. The 135 pages are packed with statistics and are important just now because of the renewed effort among the nations to stamp out tuberculosis.

Dermatology

Skin Diseases, Nutrition and Metabolism. By ERICH URBACH, M.D., associate in dermatology, University of Pennsylvania School of Medicine. With the collaboration of EDWARD B. LEWINN, M.D., associate in medicine, Jewish Hospital, Philadelphia. Illustrated. New York: Grune & Stratton, 1946. Pp. xxii 634. Price \$10.00.

The author evaluates skin in health and disease as an integral part of the entire organism. Indeed, many diseases of the skin are the consequence of disordered metabolism or nutrition or anatomic diseases of the internal organs, particularly the gastro-

intestinal tract, the pancreas, the endocrine glands and the nervous system. On the other hand, certain inflammatory processes of the skin due to infection or chemical irritation may give rise to hepatic, digestive and other visceral disturbances. Furthermore, dermatoses and other internal disorders constitute concomitant expressions of some underlying systemic disease. With this mechanistic thesis the author interrelates dermatology and internal medicine from the standpoint of nutrition, biochemistry and metabolism. It is a mechanical approach to skin disease and constitutes a more rational basis than the clinical attempts that have thus far been made in evaluating dermatoses. The book is divided into five parts: biochemistry of the skin; dermatoses due to malnutrition; dermatoses due to gastrointestinal, liver, hepatic, pancreatic and other visceral disorders; nutritional therapy in dermatoses; nutritional tables. Although limited in scope because many clinical entities cannot be so correlated, the book is an illuminating yet practical guide to those skin disorders that can be correlated with manifest systemic influence.

Pulmonary Diseases

Chronic Pulmonary Disease in South Wales Coalminers. Special Report Series No. 250. Medical Research Council. III.—Experimental Studies. Illustrated. London: His Majesty's Stationery Office, 1945. Pp. 94. Price \$1.50.

This is No. III in experimental studies. It supplements No. I on medical survey; and No. II on environment, physical, chemical and petrological. The whole is being directed for the council by the Committee on Industrial Pulmonary Disease. The preface is dated, March 2nd, 1945. Under A. is listed a report by the Committee on Industrial Pulmonary Disease; B. studies the mineral content of the lungs of workers from New South Wales coalfield by E. J. King and G. Nagelschmidt; C. undertakes the estimation of coal and aluminum in dried lung by E. J. King and Margaret Gilchrist; D. describes the tissue reactions produced experimentally by selected dusts from South Wales coalmines by T. H. Belt and E. J. King; and E. investigates the solubility of dusts from South Wales coalmines by E. J. King. Pathologists will be especially interested in the illustrations which show microscopic sections from lungs. This work has been carefully carried to completion and is a genuine contribution to industrial medicine with respect to mining operations.

Glycerine

Glycerin. Its Industrial and Commercial Applications. By GEORGIA LEFFINGWELL, Ph.D., and MILTON LESSER. With a foreword by WALTER J. MURPHY. New York: Chemical Publishing Co., Inc., 1945. Pp. 259. Price \$5.00.

It is a little surprising to learn that "Every man, woman or child comes in daily contact with glycerin, directly or indirectly." In sickness or in health it serves mankind; it helps to clean and beautify our homes, and is indispensable to modern living.

The Swedish chemist, Scheele, discovered glycerin 166 years ago, but its value to industry is relatively recent. Without it we would not have adhesives and cements, cleaners and polishes, electroplating,

insulation, nitroglycerin, dynamite, greases or soaps. The tanning of leather depends upon it, furs are treated with it, and high-pressure lubricants have it as a "base". Packaging materials, cellophane, plastics, paper, contain glycerin or are "processed" by it. Cosmetics, beverages, food, and pharmaceuticals utilize it. In medicine and surgery, antiseptics, wound dressings, adhesive tape and suppositories contain it. Chapter 29 in this book presents a surprising "list of glycerin uses" which runs for thirty pages! No satisfactory substitute for glycerin has ever been found. Its wide distribution in nature is a very fortunate circumstance. This book tells many interesting facts about "the sweet principle of fats" which are worth knowing.

Hematology

Hemoglobin Levels in Great Britain in 1943. With observations upon serum protein levels. By The Committee on Hemoglobin Surveys. A Medical Research Council Series No. 252. Illustrated. London: His Majesty's Stationery Office, 1945. Pp. 128. Price \$0.60.

The hemoglobin level was taken in some 13,000 adults excluding some 990 Canadian soldiers. Seven hundred pregnant women and three hundred children were measured. An effort was made to obtain a cross section of the entire population, but so many untoward factors intervened that the study was incomplete and, in this sense, indeterminable. One can only marvel at the enormous amount of time and energy that was put into this work by the committee and its delegated observers, but the question arises: was it worth while?

Dermatology

Skin Diseases in Children. By GEORGE M. MACKEE, M.D., professor of clinical dermatology and syphilology, New York Postgraduate Medical School, Columbia University, N.Y., and ANTHONY C. CIPOLLARO, M.D., associate in dermatology and syphilology, New York Postgraduate Medical School, Columbia University, N.Y. With contributed chapters. Second edition, revised and enlarged. Illustrated. New York and London: Paul B. Hoeber, Inc., Medical Book Department of Harper & Bros., 1946. Pp. 448. Price \$7.50.

Many dermatoses of infancy and childhood are somewhat different from those seen in adult years. Some are peculiar to adolescence. All cutaneous affections common to adults are modified by factors peculiar to youth. In view of these peculiarities of skin diseases in children this book has been rewritten and brought up to date. The diseases are grouped partly on etiology, partly on pathology and partly on the basis of clinical similarity. After a preliminary chapter on the care of the normal skin each disease is discussed in great detail with special emphasis on practical methods of treatment. No attempt has been made to present chemical interpretations of skin phenomena in spite of such recent progress. The book is intended primarily for the practitioner and hence made practical to the point of including typical prescriptions. Each chapter is accompanied by references from the American literature. Chapters on cutaneous anomalies, contagious disease and syphilis have been written by other workers in the field. The book is replete with clear illustrations that save much of the descriptive matter essential for clarifying a diagnosis.

Suggestion and Hypnosis

Suggestion and Hypnosis Made Practical. How To Get What You Want. By SAMUEL KAHN, M.D., faculty member of New York and Long Island Universities; formerly clinical professor of neurology and psychiatry at Georgetown and George Washington Universities. Boston: Meador Publishing Co., 1945. Pp. 200. Price \$3.00.

This book is dedicated to "The New York Psychological Society and my students and patients who have encouraged and helped me in this work". The subtitle is intriguing, for everyone thinks he ought to have what he wants and may stoop to terrible practices to get it. Then he may find that the prize is a delusion and a snare.

It is interesting to note "How do doctors use suggestion?" Well, here is the list: uniforms, pretty nurses, atmosphere, hospitals, medical odors, titles, prestige, bedside manner, dignity of speech and bearing, encouragement for convalescents, display of medical equipment, security, books, diplomas and certificates. Since these are daily "stock in trade", may be the author is right. Without knowing it, we all must "sell ourselves" to somebody, and perfectly honest and forthright ways of doing it are well set down here. The power of suggestion is well-recognized. Under proper guidance and when based on good motives, it is or may be helpful to all. When debased, it may lead to ruin. "Both functional and organic disorders can be helped through suggestion, especially when it is coupled with other recognized forms of therapy . . . The more skillful the doctor is in the use of suggestion, the better healer he becomes." (p. 113.)

On the other hand "Suggestion is sometimes so powerful that it may cause death, or may produce temporary or permanent and qualitative or quantitative changes". (p. 112.)

The little volume is simple in style, and holds the reader's attention.

Ophthalmology

Your Eyes Have Told Me. By LOUIS H. SCHWARTZ, M.D., consulting ophthalmologist to the City of N.Y. With black and white illustrations and a color-plate supplement. New York: E. P. Dutton & Co., Inc., 1945. Pp. 208. Price \$2.75.

This is an explanatory, easy-reading book from which all nonmedical readers can derive profitable instruction. Confusion exists in many minds among the "four O's"—ophthalmologist, oculist, optometrist and optician. Everyone should know that the first two are regularly licensed doctors of medicine who have studied general diseases of the body, but who have elected to care for the eyes only.

Dr. Schwartz poses some questions for lay consideration, such as: Does intense pain always warn you that you have eye disease? What's wrong with the throw-away-your-glasses theory? The effect of excessive smoking and drinking on the eyes? Can anyone wear contact lenses? Can crossed eyes be cured without operation? What causes night blindness?

This is a very interesting and helpful little book which can be read with pleasure and profit by everyone.

Sickness in Industry

A Study of Certified Sickness Absence Among Women in Industry. By S. WYATT. Assisted by R. MARRIOTT, W. M. DAWSON, NORAH M. DAVIS, D. E. R. HUGHES, and F. G. L. STOCK. London: His Majesty's Stationery Office, 1945. Pp. 34.

This report covers the final six months of 1942. Sickness absence among 20,000 women workers was 7.8 percent of the total number of working days. Respiratory, digestive and nervous disorders are the chief causes given. There were also the usual indefinite "nervous debility" and "general debility", which means little or nothing from a statistical viewpoint.

The highest absence was among the age group thirty to fifty, and married women were more often "sick" than single women. Production workers, "examiners" and clerical workers run the gamut from high to low. The importance of sickness records is stressed with the hope that industry will take a more and more definite interest in sickness absence if for no other reason than that it reduces production.

Marriage and Divorce

Unhappy Marriage and Divorce. A study of neurotic choice of marriage partners. By EDMUND BERGLER, M.D. With an introduction by A. A. BRILL, M.D. New York: International Universities Press, 1946. Pp. 167. Price \$2.50.

The high tendency to divorce is becoming a national danger in all countries, but we think of it as essentially American in these days of war brides or hurry-up marital contracts. "Neurosis" is the word which explains these unhappy unions to psychiatrists. "Neurotics are unfit for good marriages." A misunderstanding, a lovers' quarrel, and off they go to the divorce court without even so much as an effort to find out why adjustment to each other seems so difficult. May be it is a neurosis of one or the other, or both partners. Well, Bergler thinks that many such can be cured by proper psychiatric management. If so, it is time the news gets around, high time.

"Divorce, in most cases, is no solution at all, but only an admission of helplessness to master a situation of inner conflict." Simply changing partners does not "cure" the condition, for some persons enter into one such contract after another.

Sexual incompatability is too often a basic cause of lost respect and lost love. "Most men are ridiculously naive in sexual matters." They seem not to understand that every woman must be wooed before each sexual experience. A show of tenderness, fondling, "petting", and a slow approach may work wonders in the stage of excitement. The same is true of the aftermath. Satisfaction should not be so complete that a man finds a sudden urge to get up and read his paper, leaving his spouse despondently alone. These are simple pointers which ought to be a part of the sex education of every person, male or female. Disgust of one party for the other may be based on improper approach or vulgar misconduct. If so, it marks the beginning of the end for many a romance which ought to have continued.

Books like Dr. Bergler's should be taken seriously by doctors and patients alike. They may help solve "problems" and save our nation from impending social dissolution.

MEDICAL RECORD

A National Review of Medicine and Surgery, Established 1843

FORMERLY KNOWN AS THE MEDICAL JOURNAL AND RECORD

PUBLISHED MONTHLY BY

THE MEDICAL JOURNAL AND RECORD PUB. CO., INC.

Office of Publication: 307 Main Street, Kutztown, Pennsylvania.

Editorial and Executive Offices: 215 Fourth Avenue, New York 3, N. Y.

GREGORY STRAGNELL, M.D. *Editor*

A. M. MARLATT *Assistant Editor*

EDWARD C. TULKA *Business Manager*

Subscription Price: Under Domestic Postage, \$4 Yearly; Under Foreign Postage, \$4.75 Yearly; Single Copies, 40 cents.

Remittance should be made by New York Exchange, post office, or express money order, payable to The Medical Journal and Record Publishing Company, Inc., or by registered mail, as the publishers are not responsible for money sent by unregistered mail. Remittances from Foreign Countries should be made with International Money Orders.

MANUSCRIPTS

All material for publication should be sent to THE EDITOR of the MEDICAL RECORD, 215 Fourth Avenue, New York 3, N. Y.

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SEPTEMBER 1946.

Medicolegal Notes

Right to Inspect Hospital Records

An application for leave to inspect and make a copy of the record of a voluntary charitable hospital respecting two hospital patients who had died was denied because the hospital was not a party to any action. Moreover, no witness was sought to be examined, so that the situation did not come within section 296-a, Civil Practice Act. Nor were the records under the control of an opposing party. Sec. 324, Petition of Cenci (St. John's Hospital) 185 Misc. 479, 57 N.Y.S. 2d 231.

Total Disability From Coronary Occlusion

On the opinions of two doctors, given from a history of the case and treatment, that the lifting of an I-beam in the course of his employment precipitated or initiated a coronary occlusion and their opinions as to the effect of such a disease, the Texas Court of Civil Appeals, *Coleman vs. Tyler State Bank and Trust Co.*, 194 S.W. 2d 145, held that the evidence sustained a jury finding that the lifting caused the coronary occlusion, and the coronary occlusion resulted in total permanent disability, authorizing an award predicated upon such disability.

Causal Relation Between Accident and Condition Not Established

Awards may properly be revoked on the ground that causal relation between the accident and the disabling condition, in this case osteoarthritis of the hip, was not established. The board's decision rescinding further awards of the referee for injuries allegedly resulting from a compensable accident in 1933 was affirmed. *Slosson vs. Chazy Telephone Co.*, 269 App. Div. 916, 57 N.Y.S. 2d 549.

Admissibility of Evidence in Workmen's Compensation Cases

Affirming an award to an aircraft factory worker who was struck in the left breast by a stringer, cancer ensuing, it was held that, there being a difference of medical opinion as to whether the blow caused the cancer, it was error not to permit counsel for the insurance carrier to examine the physician for the carrier on the theory of traumatic cancer, after the referee had inquired into that matter, but also held that the error was not serious enough under the circumstances to require a reversal. *Roth vs. Curtiss-Wright Corp.*, 269 App. Div. 916, 57 N.Y.S. 2d 459.

Injury to Hands by Poisonous Substance Compensable

Physical injuries to the hands of an employee caused by using a poisonous substance in doing his or her work are compensable injuries under the Massachusetts Workmen's Compensation Law. An inspector and packer of rubber soles, furnished by her employer with gasoline containing tetraethyl lead, a toxic substance, which she used for removing spots from soles, sustained injuries to her hands as a result, and became afflicted with anemia and arthritis. It was held that the evidence sustained the board's findings that the employee suffered an injury which arose out of and in the course of her employment. *Perrotta's Case* 318 Mass. 737, 64 N.E. 2d 19.

Partial Permanent Disability; Temporary Partial Disability

Evidence was held to sustain the board's finding that the claimant had fully recovered from a prior injury for which he had received compensation for a limited period. A second injury resulted when a piece of slate struck him on the back. Medical evidence conflicted with this; our doctors testified from x ray and physical examinations that the claimant was suffering from no disability resulting from traumatic injury at the time of proof. Claimant's medical witness testified that in his opinion claimant had sustained a partial permanent disability of fifty percent to the body as a whole. There was no proof of a temporary partial disability existing at the time of the hearing. It was therefore held there was no evidence to support the board's finding. Under the evidence the board was limited to a finding of partial permanent disability or to a finding that the claimant's disability had ceased. A judgment affirming the board's award of compensation was therefore reversed. *Mary Helen Coal Corp. vs. Miller*, Kentucky Court of Appeals, 104 S.W. 2d 69.



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Prosthetics Commission Reports

Outstanding aspects of European developments in artificial limbs and surgical techniques for amputation cases have been reported to the Secretary of War and the Surgeon General of the Army, by the group of scientists recently sent to England, France and Germany for this purpose.

Dr. Klopsteg, chairman of the committee appointed by the National Research Council, reported that no other country is conducting a program of research in this field in any way comparable to the great effort here for which the Army has already provided \$1,000,000. While it was found that the work in this country on most aspects of the problem is far advanced when compared with that in Europe, and that the materials for and construction of artificial limbs are superior here, information of significant value was obtained from the European studies.

Of particular interest to the Secretary of War were certain improvements in cineplastic surgery and two developments in the design of artificial legs. Cineplastic surgery consists of surgical treatment to establish "muscle motors" through eyelet "tunnels", made in muscles of the arm-stump and lined with normal skin of the arm. By means of these, motions of an artificial hand can be controlled by cables connected with ivory pegs passed through the "tunnels". With the improvements in artificial arms now in process and expected from the great research program now under way here, the hope is that this new cineplastic surgery can be employed to make a marked increase in the range of things ampu-

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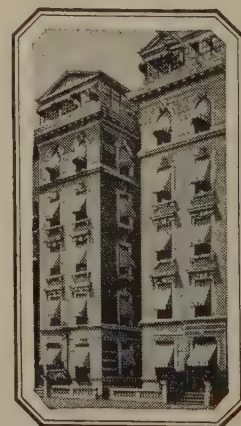
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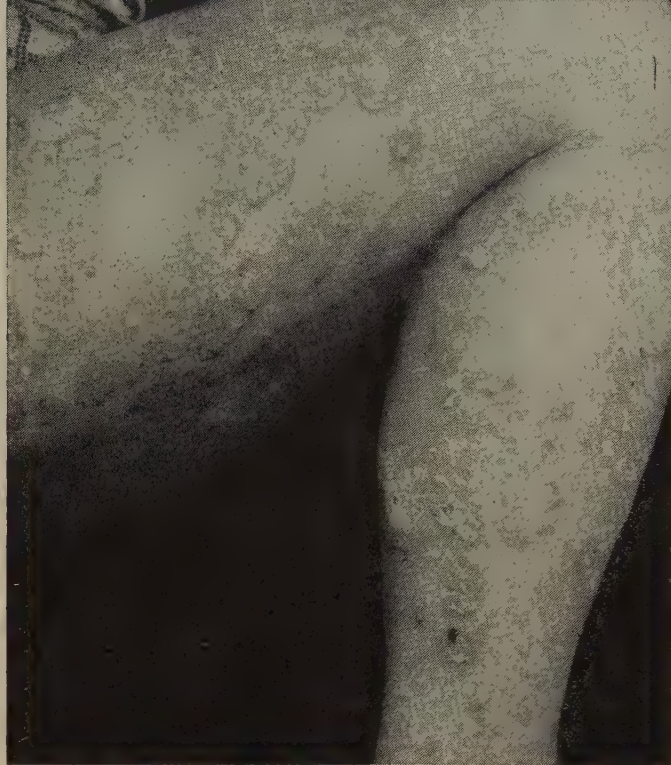
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tees can do with their man-made arms.

Another result of the group's studies in Germany was the demonstration of the almost universal use there of artificial legs with "suction sockets" for above-the-knee amputees. This consists of a method of holding the leg on by a vacuum in the socket, which can be released by a valve when it is desired to take the leg off.

Another development in artificial legs reported by the group is a German device for hydraulic control of the knee joint for above-the-knee amputees. In this the joint may be at will made to hold weight or to flex. This would overcome problems which have been difficult ones for above-the-knee amputees, particularly those with double amputations.

Dr. Klopsteg reported to the Secretary and the Surgeon General that he was confident that artificial legs embracing these improvements could be greatly further developed by American scientists and qualified contractors.

He also expressed confidence that the new development in cineplastic surgery, when used in conjunction with improved types of artificial arms, now in process of development or which can be evolved from the present research program, would make a marked favorable change in the prospect for many arm amputees.

Greatly encouraged by this report in his efforts to provide better help for amputees, Secretary Patterson directed that the War Department continue to give every possible support, financial and otherwise, to the Committee's research

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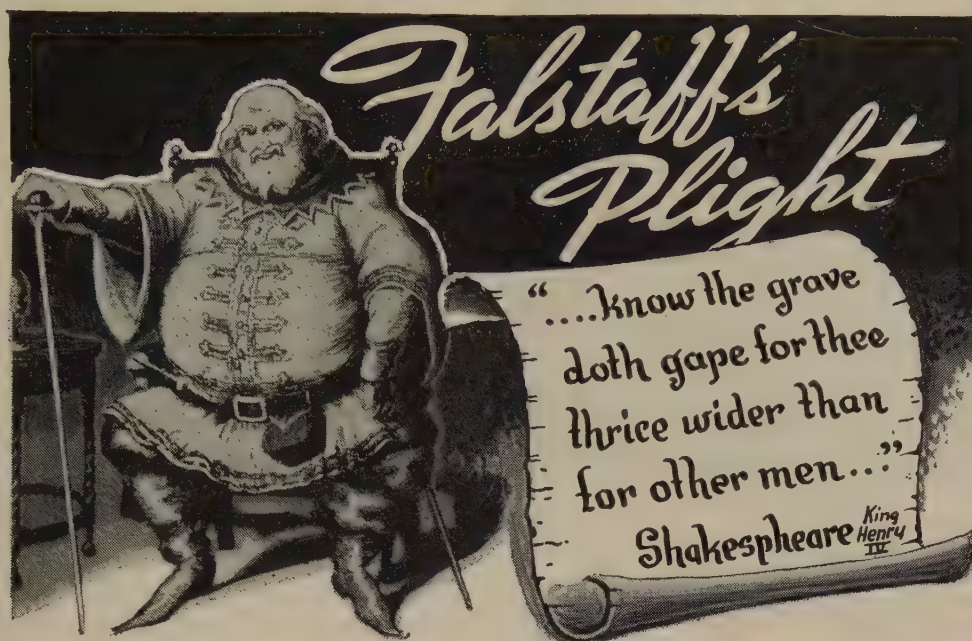
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1. M. Rec., 158:420, 1945.

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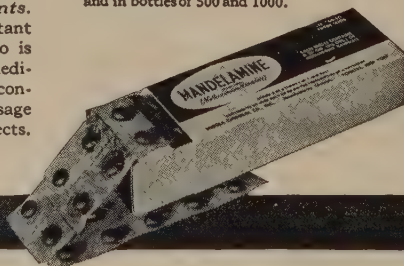
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program, and stated that he proposed to ask the direct aid of certain other large corporations with great research divisions to speed up the work still further. Several such companies are already so engaged under contracts with the Committee.

Penicillin in Upper Respiratory Infections

Dr. Louis D. Sulman (*Medical Times*, August 1946) stated that due to the effectiveness of this drug against many of the pathological organisms which invade the nose and throat, it offers quite evident possibilities in this field. Penicillin is one of the most extensively investigated drugs of modern times. This method of application is not suitable in all conditions but it is particularly adaptable in the treatment of upper respiratory infections which include acute and subacute infections of the nose, sinuses, nasopharynx, pharynx and mouth and occasional cases of chronic otitis media. The successful local use of any agent which prevents or arrests the growth of bacteria is, of course, contingent upon the drug reaching the site of the infection. Use of a good vasoconstrictor to shrink the swollen mucous membranes and open up the nasal passages is necessary.

Dr. Sulman pointed out that parendrine hydrobromide is excellent as a vasoconstrictor. It is less irritating than ephedrine and its shrinking action is twice as rapid and twice as lasting as that of the latter. A combination of penicillin and parendrine hydrobromide therefore, seemed to be the logical answer in



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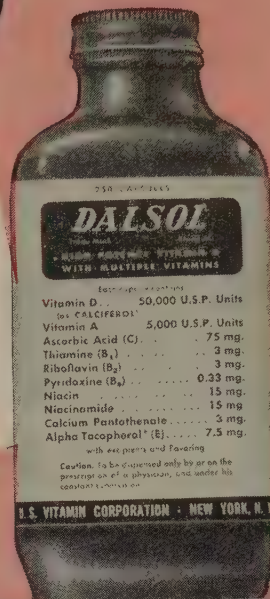
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the therapy of upper respiratory infections.

Dr. Sulman with the aid of Dr. Samuel M. Zion treated sixty-one cases of upper respiratory infections in Philadelphia with a combination of 800 Oxford units of penicillin per cubic centimeter and one percent of paredrine hydrobromide. The medication was administered by nasal tamponage in addition to nose drops or in some cases by either method alone. Therapy with a combination of penicillin and this vasoconstrictor was found to cause an effective decongestion; improve the character of the nasal discharge and in many cases shorten the duration of the infection. Results in fourteen cases were excellent; in forty-one they were classified as good; and in five cases, fair. Only one case showed no improvement.

Experimental Research on the Effects of Extreme Cold

It was reported by the Surgeon General's Office that extreme or prolonged cold tends to clot the red blood cells so that they plug the circulation which eventually results in development of gangrene and loss of limbs.

This has been established both by careful study of pathological tissue from overseas soldiers and experiments with rabbits in which limbs were subjected to temperatures of minus 30 degrees centigrade.

The condition became of great importance in the European Theater during the last war. It was most dramatically exemplified among air crews subjected to the extreme temperatures four or five miles over the clouds. Even an ex-



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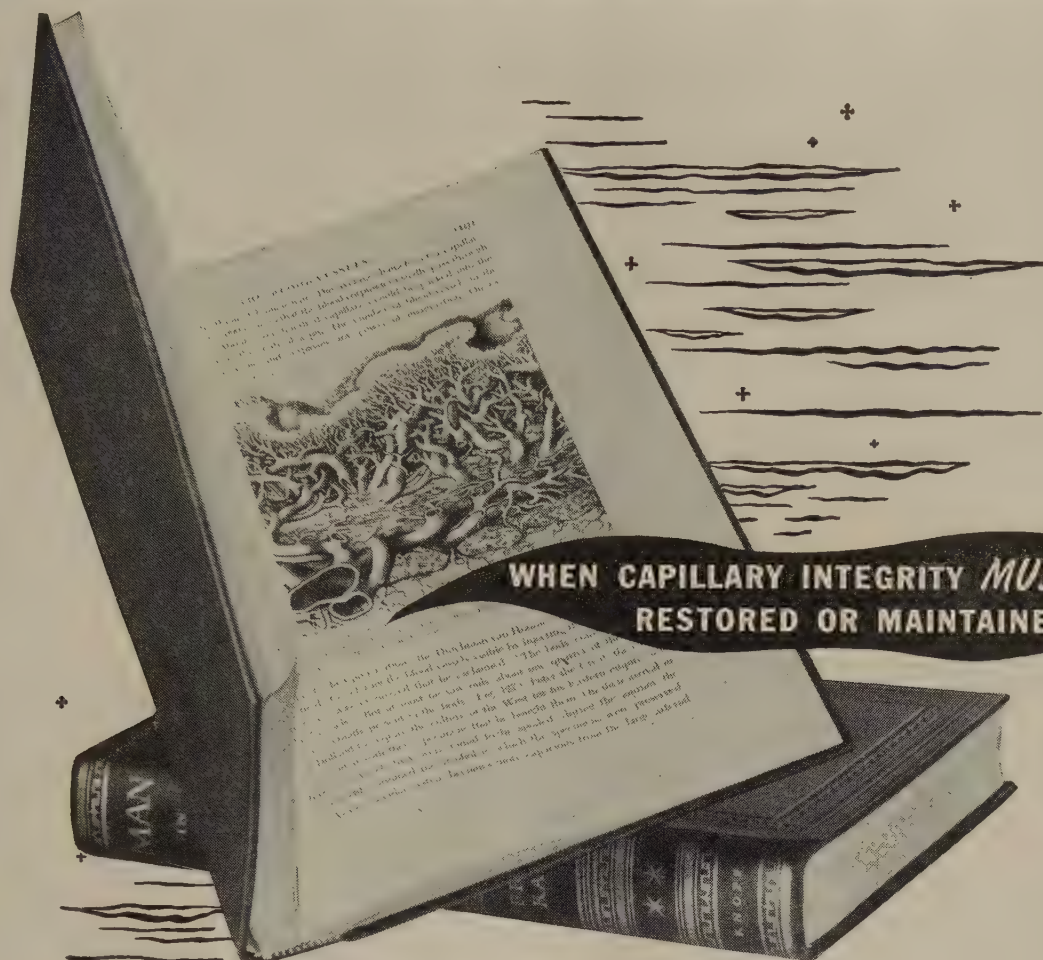
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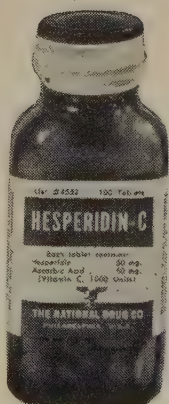
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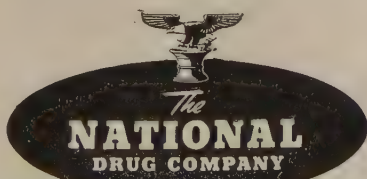
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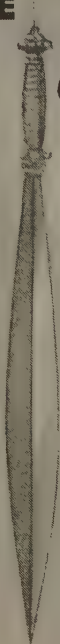
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This new preparation is likewise valuable in other disorders arising from or exhibiting abnormal capillary fragility. These include arsenical erythema and dermatitis, toxic purpura or erythema; certain cases of tuberculosis, Graves' disease and beriberi which present a decreased capillary resistance; and hypertension in which an initial increase in capillary fragility occurs. Many other therapeutic applications are currently under investigation. For professional literature, write to The National Drug Company, Philadelphia 44, Pa.

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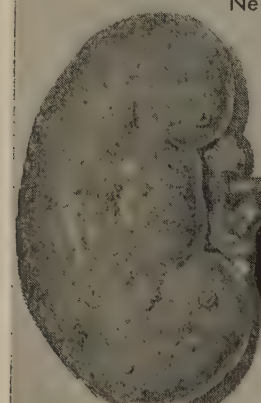
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posture of a minute or so might result in the loss of a finger. It was one of the chief causes of casualties in the Apennines campaign of the winter of 1943-44. Infantrymen sometimes stayed days at a time in fox-holes filled with slush and ice-cold water. When they were relieved they would be unable to walk and were in almost unbearable pain. Often this persisted for weeks after treatment and loss of toes was not infrequent. The condition was one in which there had been little previous experience and its pathology was not understood.

A report on the samples of pathological tissue has been made by Major Nathan B. Friedman of the Army Institute of Pathology. Several varying effects of cold were noted but in all cases red blood cell "plugs" were found which had stopped the circulation and prevented its restoration. Hence part of a limb would lose its blood supply and gangrene would be the almost inevitable result.

The same condition could be produced in the rabbit limbs immersed half an hour in alcohol at minus 30 degrees centigrade. This was a far more severe exposure than a soldier ever would be likely to encounter. The clotting could be prevented in the rabbits, however, by injections of an anticlotting substance known as heparin. Treated rabbits seemed little the worse off when their legs were thawed. The rabbit experiments were carried out by Dr. Hurt Lange and David Weiner of the New York Medical College, working in cooperation with the Institute of Pathology.

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New Alpha Epsilon Delta Chapters

The Archiatus Society of Tusculum College, Greeneville, Tennessee, became the thirty-seventh chapter of Alpha Epsilon Delta, national honorary premedical fraternity, on its installation as the Tennessee Alpha Chapter on May 18th. The initiation of fifteen active and six honorary members was conducted by Dr. Hugh E. Setterfield, associate professor of anatomy at Ohio State University College of Medicine, Columbus, and national president of Alpha Epsilon Delta, who addressed the chapter and guests on the subject of "Education for Medical Service". The Archiatus Society was organized at Tusculum during the fall of 1927 as the Pre-Medic Club.

Earlier this year, the premedical club of the Florida State College for Women, Tallahassee, became affiliated with Alpha Epsilon Delta, when it was installed as the Florida Beta Chapter. Dr. Emmett B. Carmichael, professor and chairman of the department of physiological chemistry at the Medical College of Alabama, Birmingham, and national councilor of Alpha Epsilon Delta, conducted the ceremonies and addressed the chapter on the subject "Opportunities for Women in Medicine". The installation of the Florida Beta Chapter marks the first entry of Alpha Epsilon Delta into a women's college.

Essenamine-Stearns Now Available

The Frederick Stearns & Co. Division, Sterling Drug Inc., has announced that Essenamine-Stearns is now available to physicians through hospitals and prescription pharmacies. Distribution is being limited currently to the New England and Chicago areas because of the lack of sufficient raw material to permit greater production at this time.

Essenamine is described as a new special partially hydrolyzed protein concentrate derived from lactalbumin, the protein content of milk. It is a tasty white powder, easily assimilated for oral administration, and is of a superior biological value, supplying in concentrated form all of the essential amino acids. It is further stated that with essenamine pure proteins, containing all the essential amino acids, can now be added to hot or cold beverages, soups and other foods. Experiments have demonstrated that cooking does not impair its value.

A pioneer in the development of amino acid preparations, with parenamine already established for intravenous injection in hypoproteinemia, essenamine was developed in the Stearns research laboratories under the direction of Dr. Melville Sahyun, vice-president in charge of research.

Medical literature cites many causes of hypoproteinemia for which the new product would be useful. These include burns, nephrosis, liver and gastrointestinal disease, and many other clinicopathological conditions in which the quantity of nitrogen lost far exceeds the amount which can be ingested through ordinary dietary means. Quantities of nitrogen may also be lost in infectious states, following surgical procedures, fractures, and through the

exudate of burned surfaces, draining sinuses and fistulas.

A high protein intake is likewise essential in delayed healing of ulcers and wounds and as an aid in preventing complications following gastrointestinal surgery. Protein requirements are also increased in pregnancy, lactation, anemia and various hypermetabolic states.

According to the research workers the excellent results obtained from the use of essenamine were probably due to four factors: High concentration of protein, high content of essential amino acids, lack of pronounced taste, so that it may be incorporated in large quantities in other foods, and limited solubility, minimizing the concentration of amino acids in the small intestine at any one time.

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Antibiotic Trio

Dr. John Henderson, director of clinical research, Johnson and Johnson, in a paper presented at the semiannual meeting of the Scientific Section of the Proprietary Association of America, said that, although we were now in the "golden era of therapeutic advance" only three of a great many known antibiotic substances were of practical clinical utility today. Penicillin, streptomycin and tyrothricin are today recognized and clinically useful antibiotics, each with certain unique characteristics which define its specific therapeutic sphere.

He pointed out that while exploitation of the scientific possibilities of the antibiotic field were still in a relatively preliminary stage, a seemingly inexhaustible group of antibacterial and antifungal substances derived from living sources had become of dramatic interest both to physicians and the lay public, but he warned the public against overoptimism in the use of streptomycin against tuberculosis. Streptomycin, like many other agents, exhibited considerable activity in the control of tuberculosis in guinea pigs, but optimism

for its rôle against the disease in humans had yet to be substantiated by clinical demonstration in a statistically significant series of cases. Penicillin was an extremely active and essentially nontoxic agent against many bacteria. Oral dosages of penicillin were five times those required to maintain a given blood level by injection, but this method of administration was useful in certain types of cases.

Tyrothricin, Dr. Henderson stated, was used only for topical application, and could be safely used for the treatment of superficial wounds, the tyrothricin-impregnated gauze exerting well-marked bacteriostatic and bactericidal effects against many types of bacteria. It had also been found to be nontoxic to human tissues. The successful use of tyrothricin had been reported, he continued, in the treatment of sinusitis, in the preparation of surfaces for skin grafting, in so-called "shipyard fever", in chronic mastoiditis, in empyema, in ulcers of the extremities and in osteomyelitis. Its use was complementary to that of the systemic antibiotics, sulfonamides and penicillin and it possessed many advantages for topical use.



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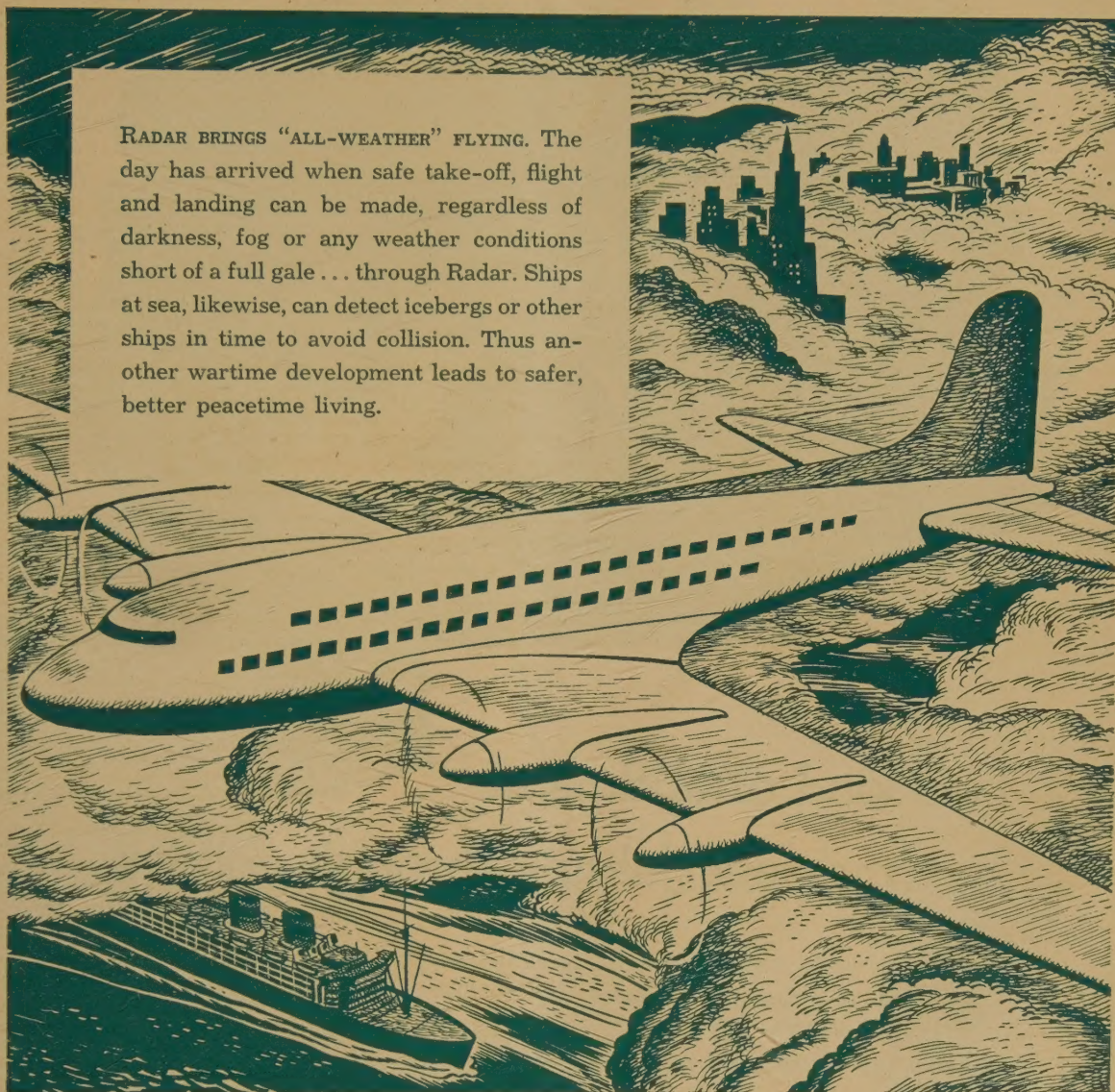
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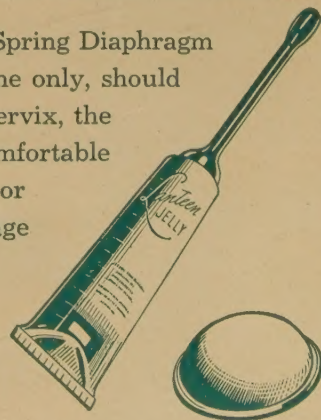


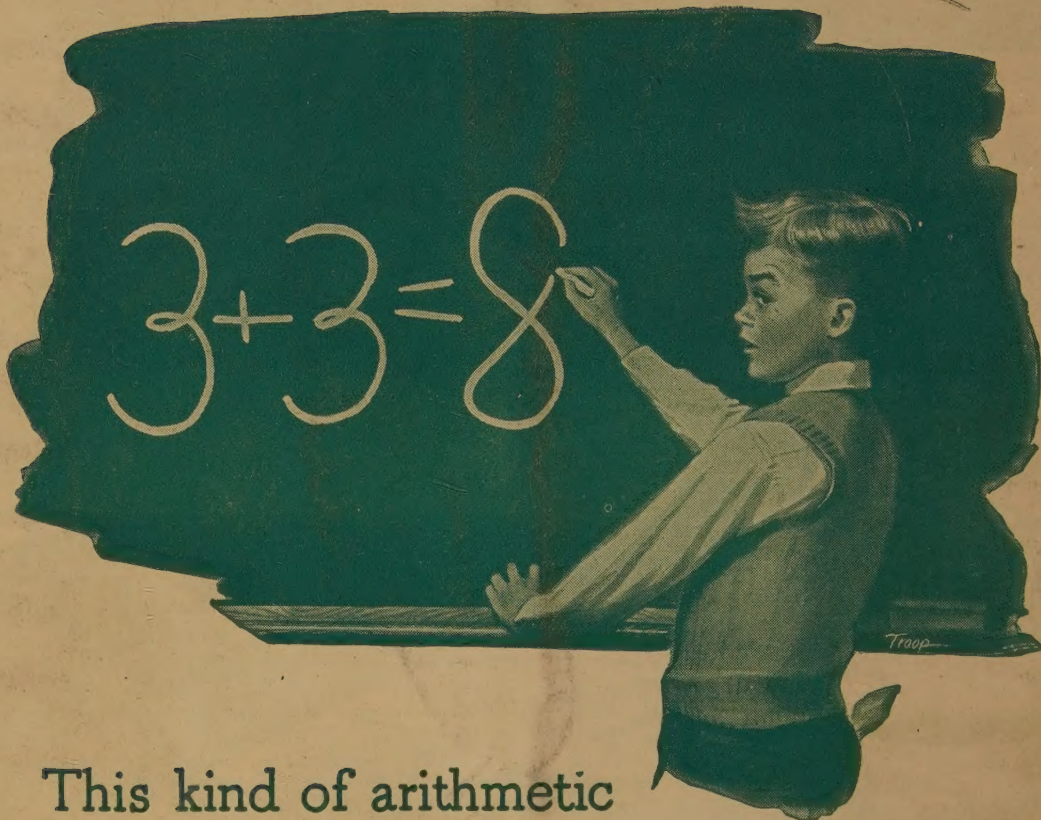
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